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Using the Paint, Shape Drawing, and Eraser Tools

9

Introduction

Adobe Photoshop supplies you with all types of adjustment and manipulation tools. In addition to image enhancement, Photoshop can also be a powerful application for designing from scratch. With the vast array of supplied brushes, tips, and shape drawing tools, Photoshop helps you produce any images, either enhanced or developed from scratch, that you might need for virtually any conceivable project.

Brushes come in all sizes and shapes, and can be controlled with a mouse or drawing tablet. Since the shape of the tip controls brush strokes, Photoshop gives you access to several sets of predefined brush tip shapes, or you can create your own customized sets. As for shape drawing tools, Photoshop doesn't limit your creativity to just drawing circles and squares; it gives you instant access to dozens of predefined shapes. You can even create and save your own custom shapes. When it comes to Photoshop's paint and drawing tools, your choices are limitless, based only on your knowledge of the available tools, and a creative imagination—the more you know, the more you can do with Photoshop.

And, when all the drawing is said and done, there will be a need for cleaning up. With the various Eraser tools that Photoshop provides, you can make quick work of touching up those small problem areas. Photoshop provides regular eraser tools, eraser tools that erase to a definable edge, and even eraser tools that target specific color values.

When enhancing an image, you might want to apply a gradient. Gradients can be something as simple as black and white, or as complex as one that contains the colors of the rainbow. Gradients can be applied to an image by completely covering the original image information, or they can be controlled through targeted selection, and creative uses of blending modes.

What You'll Do

Understand Foreground and Background Colors

Use the Brush and Brush Presets Panel

Modify the Brush Presets Panel

Select Brush Tip Sets

Adjust Brush Tips

Create and Save Customized Brush Tips

Work with the Brush, Airbrush, Mixed Brush, and Pencil Tools

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Understanding Foreground and Background Colors

The Foreground and Background colors, located near the bottom of the toolbox, are Photoshop's way of identifying your primary painting color, as well as the color Photoshop uses in conjunction with the Background layer. When you select any of Photoshop's painting or drawing tools, the color applied to the document will be the foreground color—that's its purpose. Hence, it's sometimes referred to as Photoshop's active color. The Background color serves several functions—its primary purpose is to instruct Photoshop how to handle erasing on the Background layer. When you use an eraser tool on a Photoshop layer, by default, the pixels are converted to transparency. However, when you use an eraser tool on the Background, something different happens. Since the Background does not support transparency, it replaces the erased pixels with the current background color.

Change the Active Foreground and Background Colors

Use any of the following methods to change the active foreground or background colors:

◆ Select the **Eyedropper** tool on the toolbox, and then click anywhere in the active document to change the foreground color.

Hold down the Alt (Win) or Option (Mac) key, and then click to change the background color.

◆ Click on a color swatch in the Swatches panel to change the foreground color.

Hold down the Ctrl (Win) or ⌘ (Mac) key, and then click to change the background color.

◆ Click the **Foreground** or **Background** thumbnail to choose the color's destination. Create a color in the Color panel.

◆ Click the **Foreground** or **Background** Color box to open the Color Picker dialog box, select a color or enter color values, and then click **OK**.

Color panel

Eyedropper tool

Foreground

Background

Swatches panel

Color Picker dialog box

Use Default and Switch the Foreground and Background Colors

1 Click the **Default Foreground and Background Colors** button to revert the foreground and background colors to their default values of black and white.

2 Click the **Switch Foreground and Background Colors** button to switch current colors.

> **TIMESAVER** *Press D to change the foreground and background colors to their default values of black and white, and press X to switch the current colors.*

Did You Know?

You can add colors from the Color Picker to the Swatches panel. Open the Color Picker dialog box, select the color you want to add to the Swatches panel, click Add To Swatches, type a name for the color, and then click OK.

Selecting Colors

In Windows, you can use the Color dialog box, which displays basic and custom color squares and a color matrix with the full range of colors in the color spectrum, to help you select a color. You can enter RGB values for hue, saturation, and luminosity (also known as brightness) to specify a color. **Hue** is a pure color (one without tint or shade); the name of the color (red, green, etc.) is measured by its location on the color wheel. **Saturation** is a measure of how much white is mixed in with the color. A fully saturated color has vivid tones; a less saturated color is more of a washed-out pastel. **Luminosity** is a measure of how much black is mixed with the color. A very bright color contains little or no black. You can also change the hue by moving the pointer in the color matrix box horizontally; you can change the saturation by moving the pointer vertically, and the luminosity by adjusting the slider to the right of the color matrix box. On the Macintosh, you click one of the color modes and select a color, using its controls. You can select RGB values by selecting the color sliders at the top of the dialog box, then choosing RGB Sliders from the pop-up menu, and dragging the Red, Green, and Blue sliders. Or, you can enter values (color numbers) to select a color. You can select hue, saturation, and brightness (or luminosity) values by selecting Color Sliders, choosing HSB Sliders, then dragging the sliders or entering your own values.

Using the Brush and Brush Presets Panels

Photoshop's Brushes Panel in CS4 has been split into two panels (**New!**)—Brush and Brush Presets—in CS5. The Brush panel allows you to create and select individual brushes, while the Brush Presets panel allows you to select and use predefined or custom brush tip sets or individual brushes. In the Brush panel, the current painting engine configuration, with options such as Shape Dynamics, Scattering, Texture, Dual Brush, and Color Dynamics, gives you control over brushes in ways that once were only available in programs like Adobe Illustrator.

To use the Brush or Brush Presets panel, you first need to select a brush tool, or a tool that requires the use of a brush, such as the Eraser tool, chosen from the toolbox, and then display the Brush or Brush Presets panel. You can click the Window menu, and then choose Brush or Brush Presets to display the panel. You can also click Brush Panel button (**New!**) on the Control panel (with a brush tool selected) or Brush Presets panel, or click the Brush Presets button on the Brush panel. The brush engine has been improved for quicker response, especially with a graphics tablet.
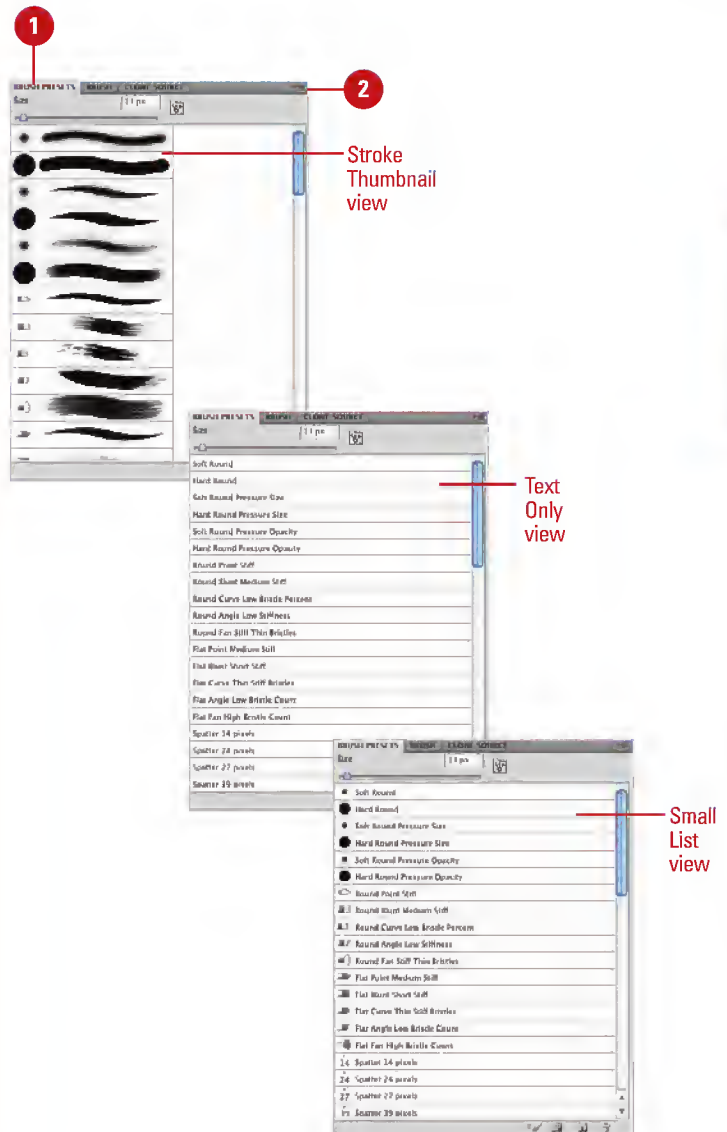
Brush panel   Brush tip thumbnails   Brush Options button

Brush Presets panel   Brush Panel button

Painting engine options   Selected brush

Preset brush tips

Modifying the Brush Presets Panel

The Brush Presets panel (**New!**) comes in many forms; you can view brushes as strokes, or you can choose thumbnails, or even text descriptions. The form of the Brush Presets panel does not impact its performance, only how you view the available brush tips. Choose the version that best suits your current design needs, and then change the view as needed. When you select a brush, it becomes the default for that tool only. This gives you the ability to choose a default brush for each of the brush-specific tools.

Change the Brush Presets Panel View

1 Select a Brush tool on the toolbox, and then select the **Brush Presets** panel.

2 Click the **Brush Presets Options** button, and then select from the available View options:

◆ **Expanded View.** Select to gain access to painting engine options: Brush Tips, Shape Dynamics, Scattering, Texture, Dual Brush, Color Dynamics, and Other Dynamics.

◆ **Text Only.** Select to display all brush tips by their names.

◆ **Small Thumbnail.** Select to display all brush tips using a small thumbnail.

◆ **Large Thumbnail.** Select to display all brush tips using a large thumbnail.

◆ **Small List.** Select to display all brush tips by their names and small thumbnail.

◆ **Large List.** Select to display all brush tips by their names and large thumbnail.

◆ **Stroke Thumbnail.** Select to display all brush tips with a stroke. (This is useful in determining how the brush will look when applied in the document.)

Stroke Thumbnail view

Text Only view

Small List view

Selecting Brush Tip Sets

The Brush Preset panel (**New!**) comes with a wide variety of predefined brush tip sets, including natural bristle (**New!**), faux finish, and special effect brushes. Each set organizes specific brush tips by name. Since other Photoshop tools also use brush tips, it's important to have the right tool (brush tip) for the right job. Using or making do with the wrong brush tip is akin to digging a swimming pool with a teaspoon. You wouldn't paint a portrait with a house-painting brush, so don't settle for anything less than the exact brush tip you need to get the job done.
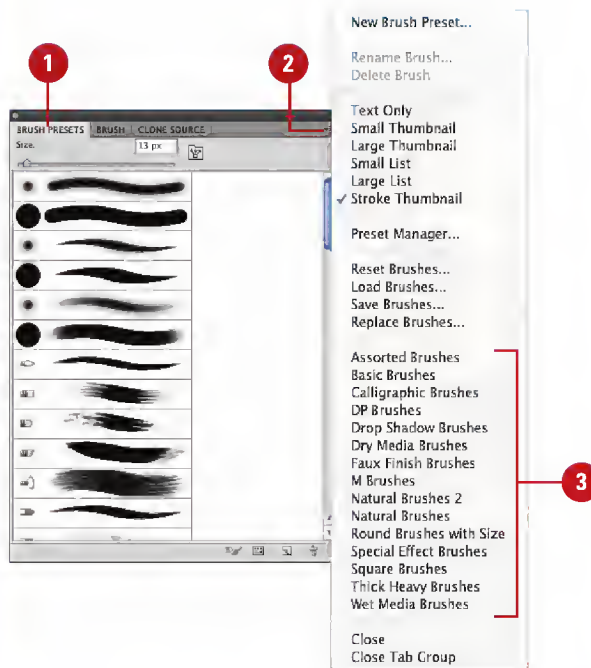
Select Brush Tip Sets

1. Select a **Brush** tool on the toolbox, and then select the **Brush Presets** panel.

2. Click the **Brush Presets Options** button.

3. Click any of the predefined brush sets.

4. Click **OK**.

   This replaces the current brush tips with the selected set, or you can click **Append** to add them to the current set.

Did You Know?

You can draw straight lines using Photoshop's brush tools. Holding the Shift key while dragging constrains the brush to a 90-degree line. To draw a straight line between two points, click once in the document window, move the mouse to another position, hold down the Shift key, and then click a second time. A straight line will be drawn between the first and second mouse clicks.

Adjusting Brush Tips

The left pane of the Brush panel provides a series of controls that let you define how a brush tip is applied to the active image. Features such as Brush Tip Shape, Scattering and Color Dynamics let you further customize your brush tips so you can create that specialized brush for all your image enhancement needs.
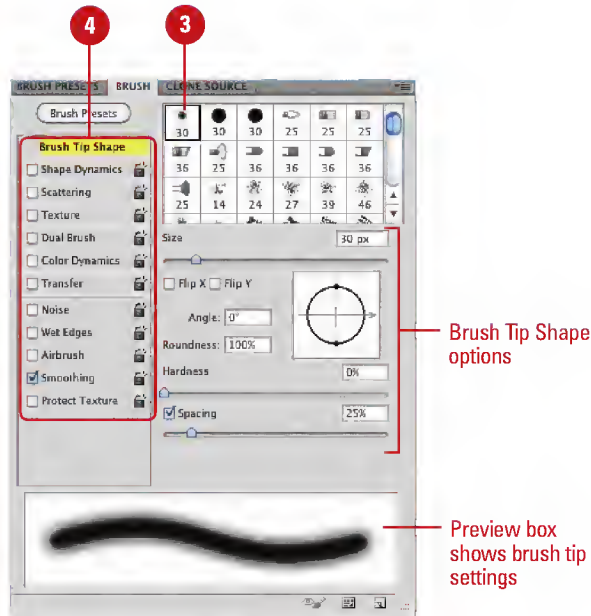
Adjust a Brush Tip

1 Select a **Brush** tool on the toolbox, and then select the **Brush** panel.

2 Click the **Brush Options** button, and then click **Expanded View**.

3 Click to select a specific brush tip.

4 Select from the various Painting Engine options:

◆ **Brush Tip Shape**. Lets you modify the size, angle, roundness, hardness, and spacing of the brush tip. In addition, you can flip the brush shape along its x (left to right), or y (top to bottom) axis.

◆ **Shape Dynamics**. Lets you randomly (jitter) generate different sizes, angles, and roundness for the brush tip.

◆ **Scattering**. Lets you randomly scatter the shape. Options include the ability to distribute (Scatter) the shape, as you draw, choose how many to use (Count), and randomly change the number (Count Jitter), as you draw.

◆ **Texture**. Lets you select a predefined or custom texture, in place of a solid color.

◆ **Dual Brush**. Lets you select a second brush.

◆ **Color Dynamics**. Lets you key off of the active foreground and background colors.

◆ **Other Dynamics**. See Table.

Brush Tip Shape options

Preview box shows brush tip settings

Other Dynamics

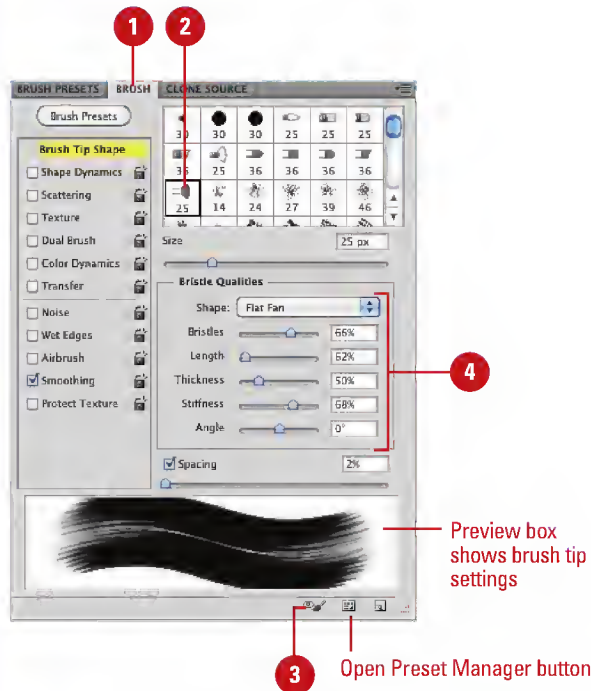| Dynamic	Purpose
Noise	Generates random noise in the brush tip as you draw.
Wet Edges	Fades the edges of the drawn shape, similar to running a watercolor brush over a wet canvas.
Airbrush	Changes the Brush tool into an Airbrush.
Smoothing	Applies anti-aliasing to the drawn shapes, creating a smoother shape.
Protect Texture	Preserves texture pattern when applying brush presets.

Adjusting Bristle Brush Tips

Bristle brushes (**New!**) simulate the effects of painting with a natural brush, such as watercolors and oils. When you use a bristle brush, it paints with vectors to resemble a natural brush stroke. When you select a bristle brush, you can set brush options, such as brush shape (either, round or flat), brush size, length, density, thickness, and stiffness. If you want to see a visual representation of your changes, use the Toggle the Bristle Brush Preview button (**New!**) on the panel. When you use a writing tablet and 6D pen, such as a Wacom Art Pen, with a bristle brush, the pen responds to pressure, bearing, rotation, and tilt.

Adjust a Bristle Brush Tip

1. Select a **Brush** tool on the toolbox, and then select the **Brush** panel.

2. Click to select a bristle brush tip.

3. To show or hide the bristle brush preview, click the **Toggle the Bristle Brush Preview** button on the panel.

4. Select from the various bristle options:

   ◆ **Shape.** Lets you select a bristle brush shape, such as Round or Flat (Point, Blunt, Curve, Angle, or Fan).

   ◆ **Bristles.** Lets you modify the density of the bristle between 1% and 100%. The density is the number of bristles in a specified area of the brush neck.

   ◆ **Length.** Lets you modify the length of the bristle between 25% and 500%.

   ◆ **Thickness.** Lets you modify the thickness of the bristle from fine to coarse between 1% and 200%.

   ◆ **Stiffness.** Specify the rigidness of the bristle between 1% to 100%. A lower value creates flexible bristles, while a higher value creates stiffer bristles.

   ◆ **Angle.** Lets you modify the angle of the brush.

Preview box shows brush tip settings

Open Preset Manager button

Creating Customized Brush Tips

Although Photoshop's Brush panel gives you many choices for brush tips, any good designer will tell you that no matter how many brush tips you have, you'll always want more. For example, you're working on a 100-year-old photograph, and you need a specific brush to add hair details to the blown-out areas of the image. You'll want to find a special type of brush that literally creates the illusion of wavy hair and add it to your collection of brush tips. Photoshop, in an effort to help keep you organized, gives you the ability to create your very own customized brush tips, and then save them later in organized sets.

Create a New Brush Tip

1 Open an image, scan an item, or select any of Photoshop's painting tools and create a shape for a new brush tip.

> **IMPORTANT** *Since the color of a brush is determined when the brush tip is selected, create the brush tip using black or shades of gray.*

2 Select the brush tip using any of Photoshop's selection tools.

> **IMPORTANT** *Photoshop picks up any pixel information in the underlying layers, even white. If you want the brush to have a transparent background, make sure the areas surrounding the image are transparent.*

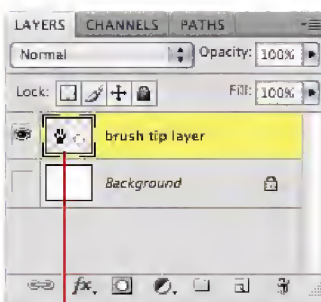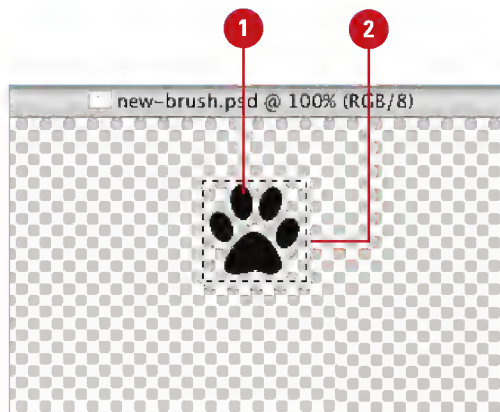**3** Click the **Edit** menu, and then click **Define Brush Preset.**

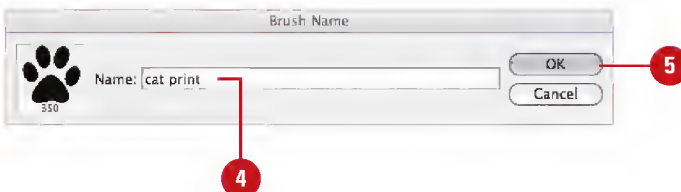**4** Enter a name for the new brush preset.

5 Click **OK**.

Open the Brush panel, and then scroll to the bottom of the list to access your newly created brush tip.

Since the Define Brush Preset button picks up any background colors within the selection area, it always creates the brush tip in a blank layer.

Layer with new brush tip

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Saving Customized Brush Tips

Once a brush tip is created, it becomes part of the current set. However, the brush has not yet been permanently saved in Photoshop. Although the new brush tip will reappear every time you access the Brush panel, if you choose the option to reset the panel, the new brush will be lost. To keep brushes you must save them into customized sets; choose the default Brushes folder, so Photoshop can use them.
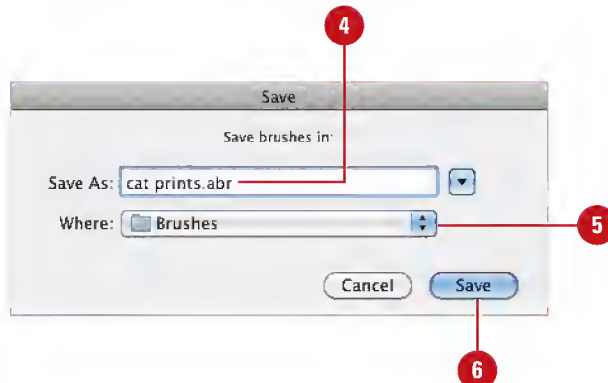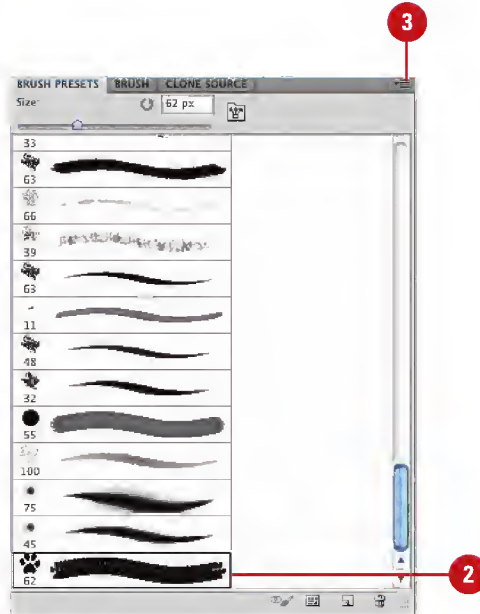
Save a Customized Brush Tip

1 Select a **Brush** tool on the toolbox, and then select the **Brush Presets** panel.

2 Create a set of customized brushes.

3 Click the **Brush Presets Options** button, and then click **Save Brushes**.

4 Type the name of the set (with a ABR extension).

5 Click the **Save In** (Win) or **Where** (Mac) list arrow, and then select where you want to save the brush set.

5 Click **Save**.

Did You Know?

You can access your customized sets directly from the Brush Options menu. When you save your customized brush set, put them in the Brushes folder, located in the Adobe Photoshop CS5/Presets folder. Brush sets saved here appear in the Brush Options menu along with the other Photoshop presets.

Working with the Brush and Airbrush Tools

Photoshop's Brush and Airbrush tools were designed to reproduce the visual effect of applying paint to a canvas. You have full control over the brush tip, color, size, opacity, and even the brush's blending mode. Control over the image is achieved by using additional layers to hold the brush strokes—but remember, adding additional layers increases the file size of a Photoshop document. Since layers have their own individual options, such as opacity, fill, and blending modes, you achieve even greater control over the final design by giving brush strokes their own layers. Once the brush stroke is to your liking, you can always merge the brush-stroke layer into the image to conserve file size.

Work with the Brush and Airbrush Tools

1. Select the **Brush** tool on the toolbox.

2. Select a brush tip on the Options bar or from the Brush panel.

3. Specify Paint Engine options for the brush from the Brush panel.

4. Select from the following Brush options on the Options bar:

   ◆ **Mode.** Click the list arrow to choose from the available blending modes. The blending modes controls how the active brush color blends with the colors in the active image.

   ◆ **Opacity.** Enter an opacity percent (1% to 100%), or click the list arrow, and then drag the slider left or right.

   ◆ **Flow.** Enter a flow percentage (1% to 100%), or click the list arrow, and then drag the slider left or right. When you apply the brush, Flow controls the amount of ink supplied to the brush.

   ◆ **Airbrush.** Click the button to change the Brush into an Airbrush.

5. Drag within the image to paint.

Traced with a 50% Opacity Paint Brush.

For Your Information

Using the Brush and Airbrush Tools

The Brush and Airbrush tools look the same, but they perform quite differently. The Brush tool maintains a specific opacity; for example, if you choose 50% opacity, the Brush maintains that opacity no matter how many times you pick up your pen and start again. However, if you release and drag again over the same area, the Brush adds another 50% application of ink to the image, producing a more saturated result. The Airbrush tool works by accumulation—dragging the image produces a brush stroke based on the opacity of the brush and the speed with which you move the tool across the image. If you hold the Airbrush tool in one position, the ink color will slowly increase until it reaches 100%, just like a real airbrush.
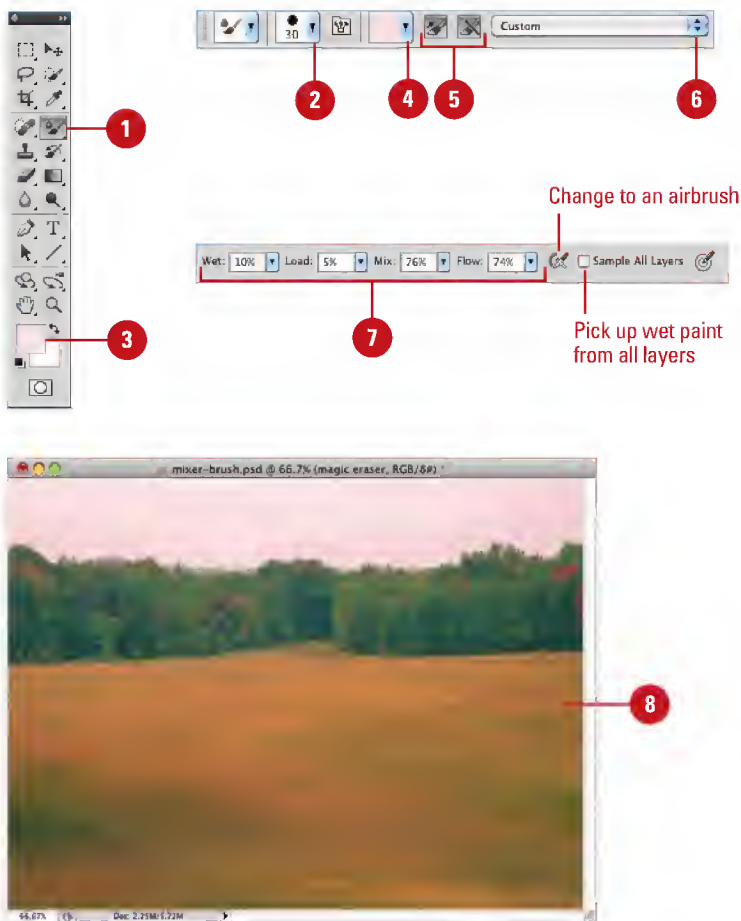
Working with the Mixed Brush Tool

With the Mixed Brush tool (**New!**), you can define multiple colors on a single brush tip, and then mix and blend them together with the underlying hues on your canvas. With a photo, you can use a dry, empty brush to blend the existing colors while at the same time adding a painting effect to the image. Mixer Brush options on the Control panel allow you to control the wetness of the brush, the load rate to add paint to the brush, the mixing rate between the brush and canvas color, and whether the brush is refilled, cleaned, or both after each painting stroke.

Work with the Mixed Brush Tool

1 Select the **Mixed Brush** tool on the toolbox.

2 Select a brush tip on the Options bar or from the Brush panel.

3 Select a mixing color.

4 Click the **Current Brush Load** list arrow, and then select **Load Brush**, **Clean Brush**, or **Load Solid Colors Only**.

5 Click the **Load the Brush After Each Stroke** or **Clear the Brush After Each Stroke** button.

6 Click the **Blending Combinations** list arrow, and then select a preset.

7 Specify a percentage (1% to 100%), or click the list arrow, and then drag the slider for any of the following Mixed Brush options on the Options bar:

◆ **Wet.** Controls the wetness of the brush.

◆ **Load.** Controls the load rate to add paint to the brush.

◆ **Mix.** Controls the mix rate between the brush and canvas color.

◆ **Flow.** Controls the amount of ink supplied to the brush.

8 Drag within the image to paint.

Change to an airbrush

Pick up wet paint from all layers

Working with the Pencil Tool

The Pencil tool is exactly what its name implies...a pencil. The Pencil tool is limited to hard brush tips of any size or shape, and creates freeform lines using the current foreground color. In fact, the major difference between the Pencil and Brush tools is the Pencil tool's inability to draw anything *but* a hard-edged line. A unique feature of the Pencil tool is its ability to switch between the current foreground and background colors using the Auto Erase feature.
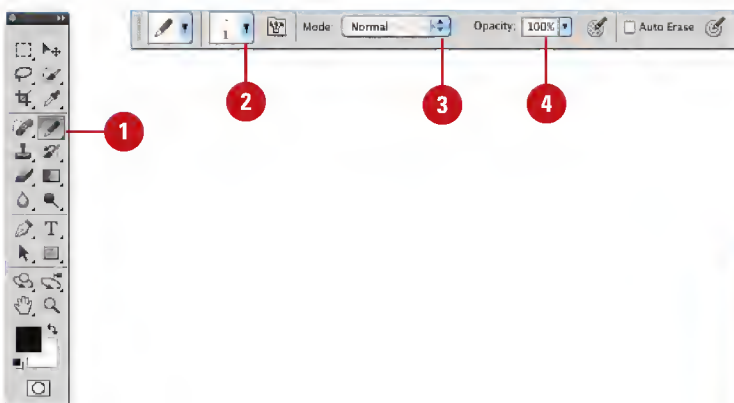
Work with the Pencil Tool

1. Select the **Pencil** tool on the toolbox.

2. Click the **Brush Preset Picker** list arrow, and then click a brush tip.

3. Click the **Mode** list arrow, and then select a blending mode.

4. Enter an Opacity percentage value (1% to 100%).

5. Drag the **Pencil** tool across the active document.

Did You Know?

You can use the Pencil tool to create calligraphy lettering. Select the Pencil tool, click black as your painting color, and then click one of the oblong brush tips on the Options bar. If you own a drawing tablet, use the tablet with the Pencil tool to create beautifully formed calligraphy letters.

Working with Auto Erase

The Auto Erase feature lets you automatically switch the Pencil tool's painting color using the current foreground and background color swatches. The trick is where you start drawing the line. If you start dragging the brush tip from a new location in the document, the Pencil tool creates a line in the active foreground color. If you then place the brush tip on a previously drawn line and drag, the Pencil tool creates a new line in the active background color. Since the Auto Erase feature doesn't really erase anything, it will perform exactly the same way on a transparent layer as it does on the background layer.
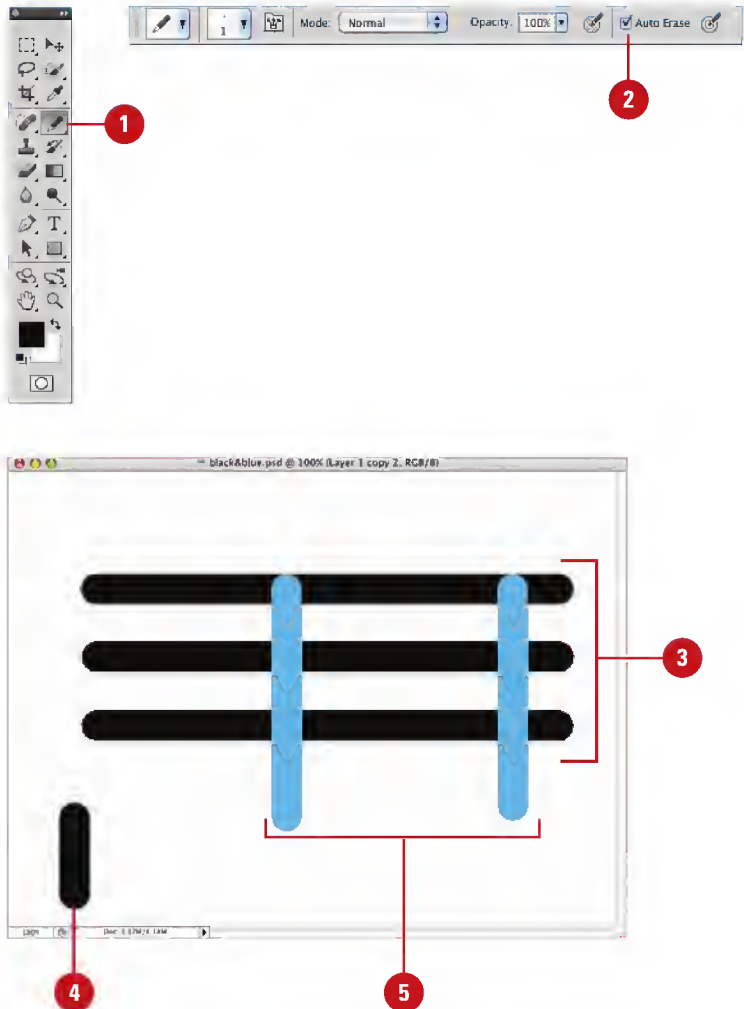
Work with Auto Erase

1. Select the **Pencil** tool on the toolbox.

2. Select the **Auto Erase** check box on the Options bar.

3. Drag the **Pencil** tool across the active document to create a line in the active foreground color.

4. Click anywhere in the background and the Pencil tool will use the foreground color.

5. Move the brush tip over one of the previous lines, and then drag to create a line in the active background color.

Did You Know?

You can draw straight lines with the Pencil tool. Click once in the document to create a black dot, move to another position, hold down the Shift key, and then click again. When you hold down the Shift key, the Pencil tool creates a straight line between the two mouse clicks.

Working with the Line Tool

The Line tool lets you draw lines by dragging from one point in the active document and releasing in another. You can draw lines at precise 45- or 90-degree angles by holding down the Shift key as you drag. Select the Line tool, or if you already have another drawing tool selected, you can choose the Line tool from the toolbox. Then configure the Line tool using the Options bar. It's also a good idea to create the lines in a separate layer. That way, once the lines have been drawn, it's as easy as selecting the Move tool and repositioning them where you want them.
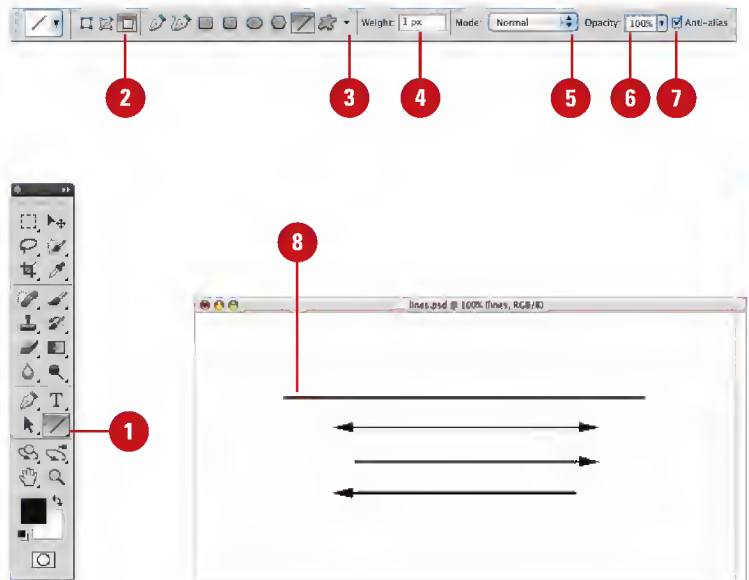
Work with the Line Tool

① Select the **Line** tool on the toolbox.

② Click the **Fill Pixels** button to create raster shapes in the active foreground color.

③ Click the **Geometry** options list arrow, and then select from the following options:

- ◆ **Arrowheads.** Select the Start and/or End check boxes to create arrowheads on the line.

- ◆ **Width.** Enter a percentage (10 to 1,000), to determine the width of the arrowhead in relation to the width of the line.

- ◆ **Length.** Enter a percentage (10 to 5,000), to determine the length of the arrowhead.

- ◆ **Concavity.** Enter a percentage (-50 to +50) to determine the concavity of the arrowhead.

④ Enter a value (1 to 1,000 pixels) to determine the weight of the line.

⑤ Click the **Mode** list arrow, and then select a blending mode.

⑥ Enter an Opacity percentage value (1% to 100%).

⑦ Select the **Anti-alias** check box to create a visually smoother line.

⑧ Drag in the document window to create the line.

For Your Information

Using the Line Tool

The Line tool can be used to create customized guidelines for those projects that require something other than vertical or horizontal guidelines. Just create a new layer, and then select the Line tool. Choose a line weight (width) of one or two pixels, select a drawing color that contrasts with the image, and then draw the required guides. When you're finished, lock the layer, and use the visual guides to complete your project. Hide the layer when it's not needed, and finally, delete the layer when you're done with the job. One more thing—remember to turn off the Arrowheads option.
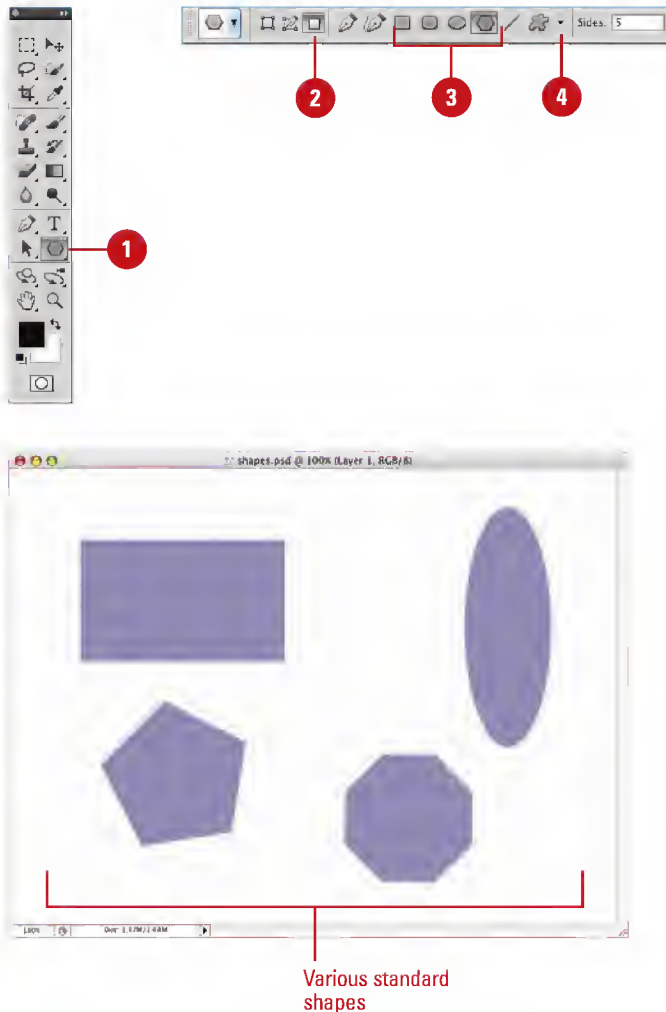
Using the Standard Shape Tool

Creating standard shapes, such as polygons or rectangles with rounded corners, used to be a hassle. That is, until Photoshop released its Standard Shape drawing tools. Now, it's a simple matter of selecting the correct tool, choosing a color, and then drawing the shape. As with any of Photoshop's drawing functions, control is maintained with the use of additional layers. Photoshop's standard shapes include rectangles, rounded rectangles, ellipses, and polygons. Each one of the shape tools comes with additional options to control exactly how the shape appears when drawn.

Work with the Standard Shape Tool

1. Select the **Rectangle**, **Rounded Rectangle**, **Ellipse**, or **Polygon** tool on the toolbox.

2. Click the **Fill Pixels** button to create raster shapes in the active foreground color.

3. To switch tools, click the **Rectangle**, **Rounded Rectangle**, **Ellipse**, or **Polygon** tool buttons.

4. Click the **Geometry** options list arrow, and then select from the following drawing options or check boxes:

   ◆ **Unconstrained**. (Rectangle, Rounded Rectangle, Ellipse)

   ◆ **Square**. (Rectangle, Rounded Rectangle)

   ◆ **Circle**. (Ellipse)

   ◆ **Fixed Size**. (Rectangle, Rounded Rectangle, Ellipse)

   ◆ **Proportional**. (Rectangle, Rounded Rectangle, Ellipse)

   ◆ **From Center**. (Rectangle, Rounded Rectangle, Ellipse)

   ◆ **Snap to Pixels**. (Rectangle, Rounded Rectangle)
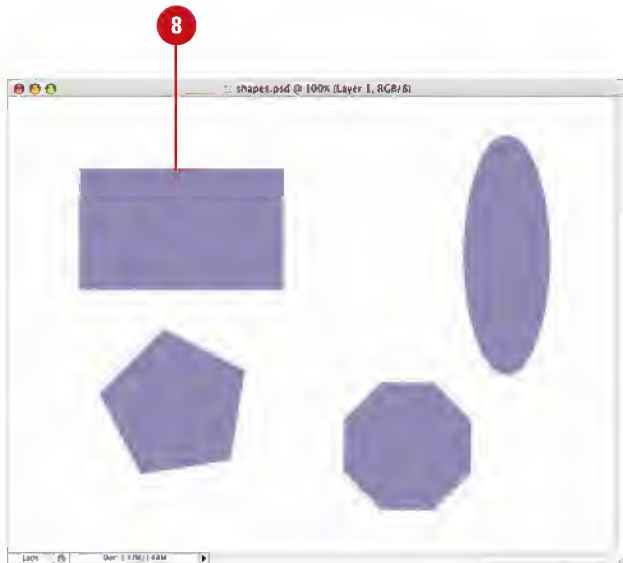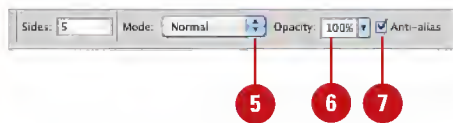

Various standard shapes

- ◆ **Radius.** (Polygon)
- ◆ **Smooth Corners.** (Polygon)
- ◆ **Star.** (Polygon)
- ◆ **Indent Sides By.** (Polygon)
- ◆ **Smooth Indents.** (Polygon)

5 Click the **Mode** list arrow, and then select a blending mode.

6 Enter an Opacity percentage value (1% to 100%).

7 Select the **Anti-alias** check box to create a visually smoother image.

Useful when drawing shapes with curved edges.

6 Drag in the document window to create the shape.

IMPORTANT *Maintain control over your design by drawing shapes in separate layers.*

For Your Information

Using the Standard Shape Tool

Once a shape has been created, you can use Photoshop's extensive layer effects options to colorize the shape, add a drop shadow or bevel, or even apply a gradient or pattern to the shape. Remember that in order to apply layer effects to the shape it must be isolated on its own layer.
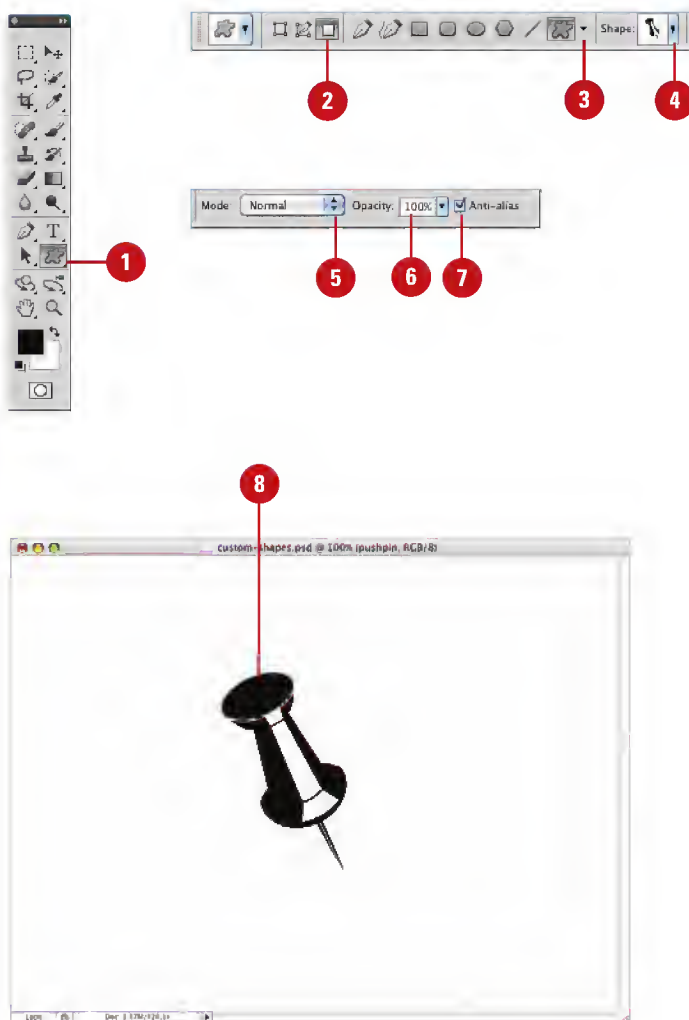
Working with the Custom Shape Tool

Having the ability to draw a perfect polygon or rounded-corner rectangle is nice; however, Photoshop went way beyond standard shapes when it introduced the Custom Shape tool. Photoshop now comes packaged with dozens of predesigned shapes, or you can even create your own. User-defined shapes can be made from literally any vector object. For example, a company logo can be converted to a custom shape. Custom shapes have many time-saving applications. As previously mentioned, a company logo, if used frequently, is only a mouse click away. Any vector form, outline, or shape used on a recurring basis, can be converted to a custom shape and saved for future use. Select the Custom Shape tool or, if you have any shape drawing tool selected, click the Custom Shape button from the Options bar, and then configure the shape using choices from the Options bar.

Work with the Custom Shape Tool

1. Select the **Custom Shape** tool on the toolbox.

2. Click the **Fill Pixels** button to create raster shapes, using the active foreground color.

3. Click the **Geometry** options list arrow, and then select from the available options: Unconstrained, Defined Proportions, Defined Size, Fixed Size, or From Center.

4. Click the **Shape** list arrow, and then select a shape from the available options.

5. Click the **Mode** list arrow, and then select a blending mode.

6. Enter an Opacity percentage value (1% to 100%).

7. Select the **Anti-alias** check box to create a visually smoother line.

8. Drag in the document window to create the customized shape.

Creating a Custom Shape

Custom shapes can be created from anything you choose, and the process is quick and simple. You just create the shape, select the shape, and name the shape. That's it. Since shapes are vector images, they're resolution-independent, which means you can draw them at any size without impacting image quality. Once custom shapes are saved, they can be accessed by opening a document, selecting the Shape tool, and choosing your new shape from the Custom Shapes panel.
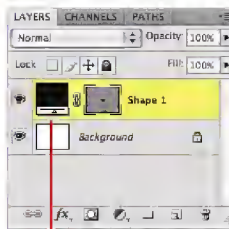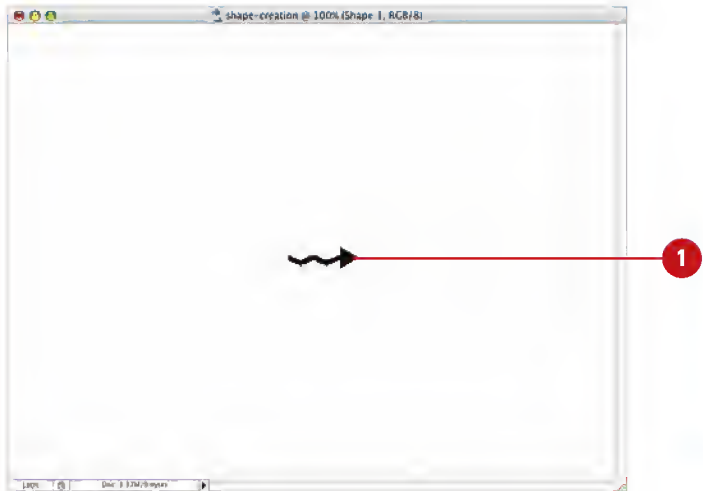
Create a Custom Shape

1. Open a document that contains the vector image you want to convert into a shape, or create a shape using any of Photoshop's vector drawing tools.

2. Click the **Edit** menu, and then click **Define Custom Shape**.

3. Enter a name for the new shape.

4. Click **OK**.

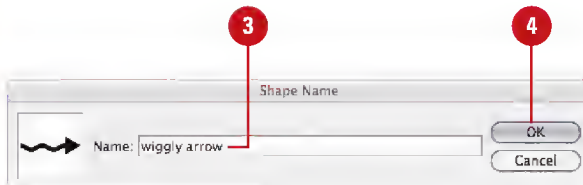   The shape appears as a thumbnail at the bottom of the active Custom Shapes panel.

Did You Know?

You can move Photoshop shapes into other vector programs, such as Illustrator, FreeHand, and even Flash. Click the File menu, point to Export, and then click Paths To Illustrator. Name the new document, and then click Save.

Shape designed in a Shape layer

Saving Custom Shape Sets

Creating customized sets of shapes is an excellent way to get organized. The next time you need a specific shape all you have to do is select the shape from your organized sets. Organization can save you time, but it also lends a sense of consistency to designs. Using the same customized shapes repeatedly helps to tie the elements of a design together, and Photoshop gives you the perfect way to maintain that consistency with customized shape sets.

Save Custom Shape Sets

1. Select the **Custom Shape** tool on the toolbox.

2. Click the **Shape** list arrow to see a list of the current shapes.

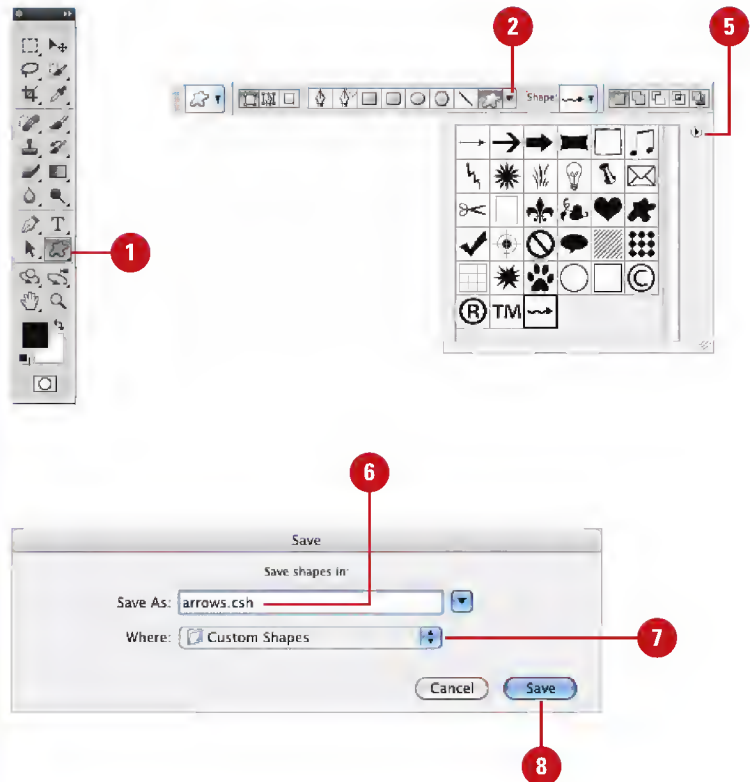3. Create new shapes, and then add them to the current list.

   IMPORTANT *As you create new shapes, if there are some you don't like, delete them. Right-click the shape, and then click Delete Shape.*

4. To add preexisting shapes, click the **Options** button, and then click **Load Shapes**, or choose from the available predefined shape lists.

5. Click the **Options** button, and then click **Save Shapes**.

6. Enter a descriptive name for the new set in the **File Name** (Win) or the **Save As** (Mac) box.

7. Click the **Save In** (Win) list arrow or **Where** (Mac) popup, and then select a location to save the new set.

   IMPORTANT *If you save the new set in the Custom Shapes folder, located in the Adobe Photoshop CS5 application folder, the new set will appear as a predefined set when you click the Shapes Options button.*

8. Click **Save**.

Using the Paint Bucket Tool

The Paint Bucket tool is not new; in fact, it's been around almost as long as Photoshop. The Paint Bucket's primary function is to fill an area with the active foreground color, but that's not all it's capable of doing. The Paint Bucket tool can fill areas with a selected pattern and, much the same way that the Magic Wand tool selects image information, the fill area can be controlled by the shift in brightness of image pixels. Combine those features with the ability to change the Paint Bucket's blending mode or opacity, and you have a tool with a lot of horsepower.
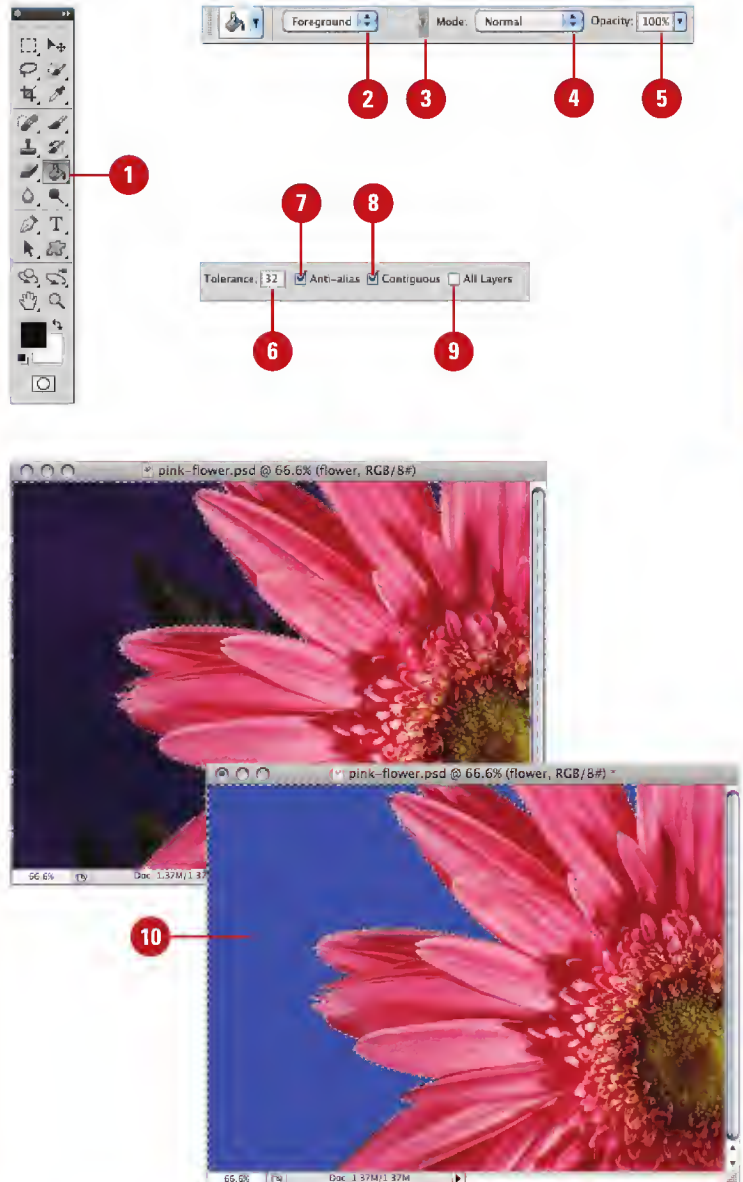
Use the Paint Bucket Tool

1. Select the **Paint Bucket** tool on the toolbox.

2. Click the **Fill** list arrow, and then select an option:
   - ◆ **Foreground.** Fills a selected area with the current foreground color.
   - ◆ **Pattern.** Fills a selected area with a pattern.

3. Click the **Pattern** list arrow, and then select a predefined fill pattern. This option is available if you select Pattern as a fill option.

4. Click the **Mode** list arrow, and then select a blending mode.

5. Enter an Opacity percentage value (1% to 100%).

6. Select a Tolerance value (0 to 255). The Tolerance value influences the range that the Paint Bucket uses to fill a given area.

7. Select the **Anti-alias** check box to create a visually smoother line.

8. Select the **Contiguous** check box to restrict the fill to the selected area.

9. Select the **All Layers** check box to fill the color range information from all the image's layers.

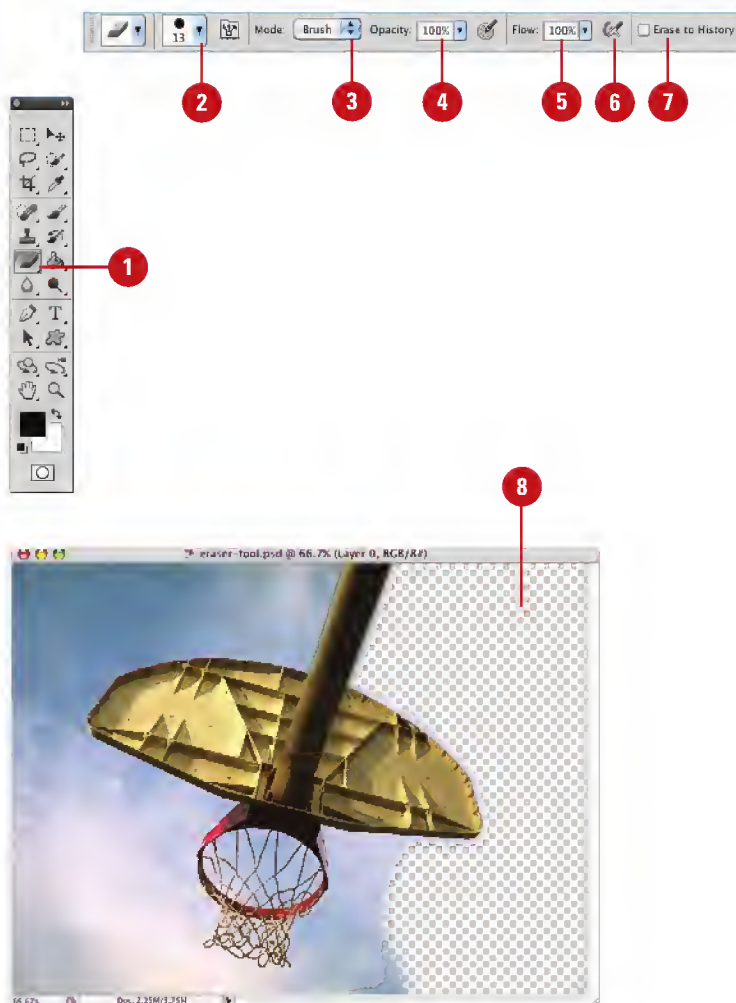10. Click the **Paint Bucket** tool cursor on the area to be changed.

Working with the Eraser Tools

Photoshop's basic Eraser tool converts image pixels in a layer to transparent pixels. While the primary function of the Eraser tool has not changed, the tool itself has been greatly improved. For example, you can use the Eraser tool to remove a specific color or to erase around the edge of an object. You can instruct the Eraser tool to remove a specific color while protecting another color and at the same time, increase or decrease the tool's tolerance (the range of selection). If you use the Eraser tool on a layered document, the tool will erase to transparency. If the Eraser tool is used on a flattened document (flattened documents do not support transparency), the Eraser tool will use the active background color to perform the erasure. As you can see, the eraser tools do more than blindly erase image information. As you master the eraser tools, you just may find those complicated eraser jobs becoming easier and easier. The Background Eraser tool lets you select specific colors within an image and erase just those colors.
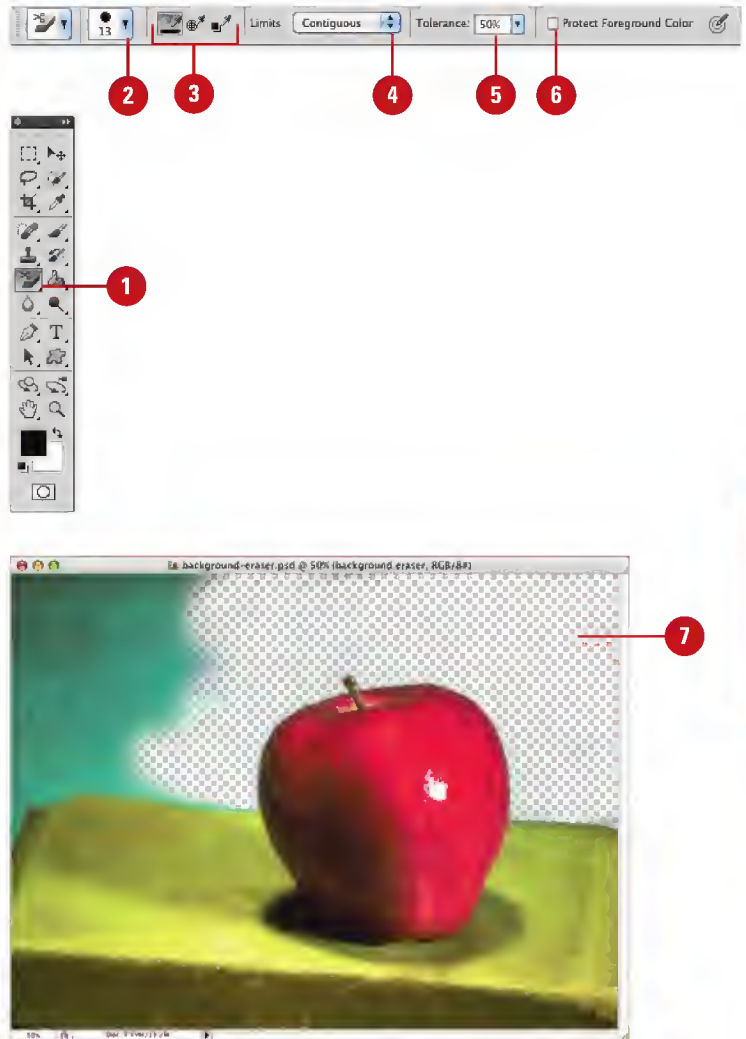
Use the Basic Eraser Tool

1. Select the **Eraser** tool on the toolbox.

2. Click the **Brush** list arrow, and then select a brush tip.

3. Click the **Mode** list arrow, and then select a blending mode.

4. Enter an Opacity percentage value (1% to 100%) to determine how much the eraser removes from the image.

5. Enter a Flow percentage value (1% to 100%) to determine the length of the eraser stroke.

6. Click the **Airbrush** button to change the solid eraser stroke of the eraser to that of an airbrush.

7. Select the **Erase To History** check box to temporarily turn the Eraser into a History Brush.

8. Drag the Eraser over an image layer to convert the image pixels to transparency.

Use the Background Eraser Tool

1 Select the **Background Eraser** tool on the toolbox.

2 Click the **Brush** list arrow, and then select a brush tip.

3 Click one of the Sampling buttons (determines how the Background Eraser selects the color range):

- ◆ **Continuous.** Continually selects a color range as you drag the Eraser tool across the image.

- ◆ **Once.** Samples a color range when you first click your mouse.

- ◆ **Background Swatch.** Only erases the active background color.

4 Click the **Limits** list arrow, and then click how far you want the erasing to spread:

- ◆ **Discontiguous.** Lets the Eraser tool work with all similar color range pixels throughout the image.

- ◆ **Contiguous.** Restricts the Eraser tool to the selected color range, without moving outside the originally sampled area.

- ◆ **Find Edges.** Looks for a shift in color range and attempts to erase to the visual edge of the image.

6 Select a Tolerance percentage value (1% to 100%). The higher the tolerance, the greater the range.

6 Select the **Protect Foreground Color** check box to prevent that color from being erased.

1 Drag in the image to erase.

Working with the Magic Eraser Tool

The Magic Eraser tool functions the same way as the Magic Wand selection tool, except that instead of selecting an area, it erases it. The Magic Eraser tool works on any traditional Photoshop layer, as well as the Background layer. Clicking with the Magic Eraser tool converts image pixels into transparent pixels. Since the Background layer does not support transparency, using the Magic Eraser tool causes Photoshop to convert the Background into a traditional layer.

Work with the Magic Eraser Tool

1 Select the **Magic Eraser** tool on the toolbox.

2 Enter a Tolerance value (0 to 255). The higher the value, the greater the range the Magic Eraser erases.

3 Select the **Anti-alias** check box to create a visually softer eraser (useful when dealing with intensely rounded or curved selections).

4 Select the **Contiguous** check box to select adjacent pixels within the active document.

5 Select the **Sample All Layers** check box to sample image information from all layers (Photoshop then treats the visual image as a composite).

6 Click within the active document.

The Magic Eraser tool, depending on the options you choose, samples the pixels directly under the tool and uses that data to create a range for erasing image information.

Creating and Applying Gradients

While most of Photoshop's painting and drawing tools let you select and paint with a single color, the Gradient tool lets you paint with a veritable rainbow of colors. The Gradient tool comes packaged with several sets of predesigned gradients—including color, transparent, and neutral density (**New!**) options—or you can create and save your own customized gradient sets. The process of creating a gradient is simple; you select a gradient along with a specific type (Linear, Radial, etc.), and then drag in the document window. The length and angle of the drag determines how the gradient is applied. Since gradients, by default, overwrite image pixels, it's a good idea to create gradients in separate layers.
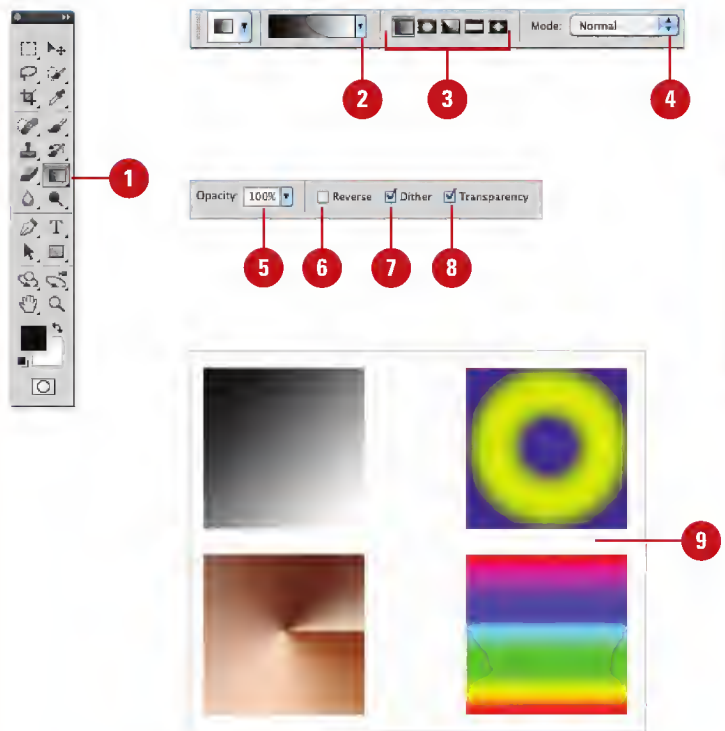
Create a Standard Gradient

1 Select the **Gradient** tool on the toolbox.

2 Click the **Gradient** list arrow, and then select from the available gradients.

◆ The preset gradients include Foreground to Transparent, Chrome, Spectrum, Transparent Rainbow, Transparent Stripes, and Neutral Density (**New!**).

3 Select one of the following gradient types from the five icons:

◆ Linear, Radial, Angle, Reflected or Diamond.

4 Click the **Mode** list arrow, and then select a blending mode.

5 Enter an Opacity percentage value (1% to 100%).

6 Select the **Reverse** check box to reverse the color order of the selected gradient.

7 Select the **Dither** check box to visually create a smoother transition between gradient colors.

8 Select the **Transparency** check box to create gradients using a gradient mask (allows for transparency in the gradient).

9 Drag in the image to create a gradient.

For Your Information

Adding Predefined Gradients

To add a predefined gradient, you must first select the Gradient tool. Click the Gradient Picker button, located on the Options bar, to use one of the available gradient sets. Choose to append the new gradients to the existing list, or click OK to replace the existing gradients with the new ones.
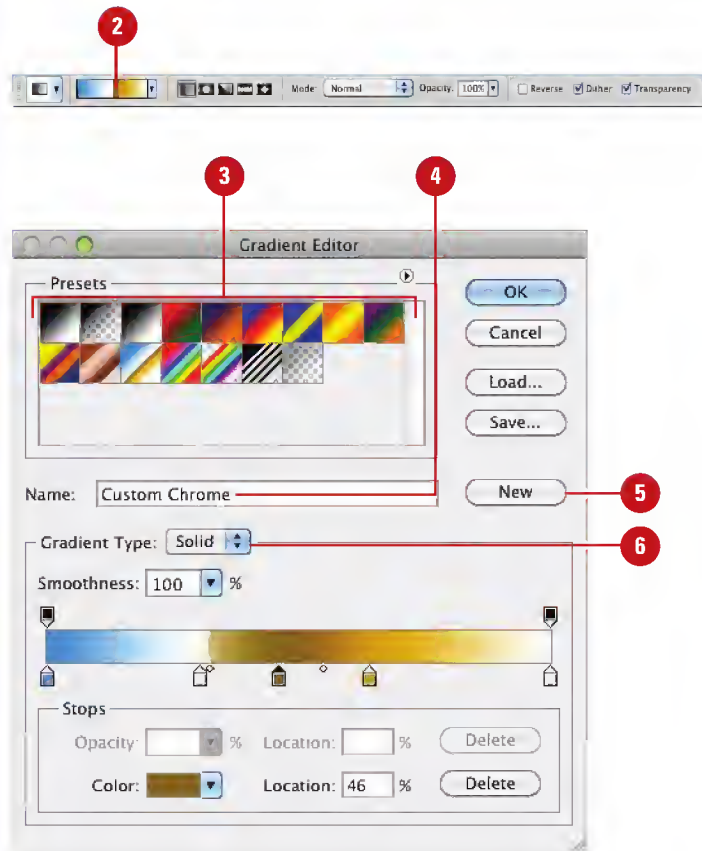
Creating and Saving Customized Gradients

Customized gradients are easy to create and essential when you just can't find what you want in Photoshop's predefined sets. It doesn't matter how many gradients Photoshop provides for you, there will always be that one instance where they just don't do the required job. With just a few clicks of your mouse, you can create your own customized gradients. You can start with one of Photoshop's gradients and modify it to your needs. You can also start completely from scratch; the choice is yours, and so are the rewards of creating that one-of-a-kind stunning gradient you can use for your current and future projects.

Create and Save a Customized Gradient

1 Select the **Gradient** tool on the toolbox.

2 Click the thumbnail of the active gradient on the Options bar to open the Gradient dialog box.

3 Select a gradient from the available options that is close to what you want to create.

   ◆ The preset gradients include Foreground to Transparent, Chrome, Spectrum, Transparent Rainbow, Transparent Stripes, and Neutral Density (**New!**).
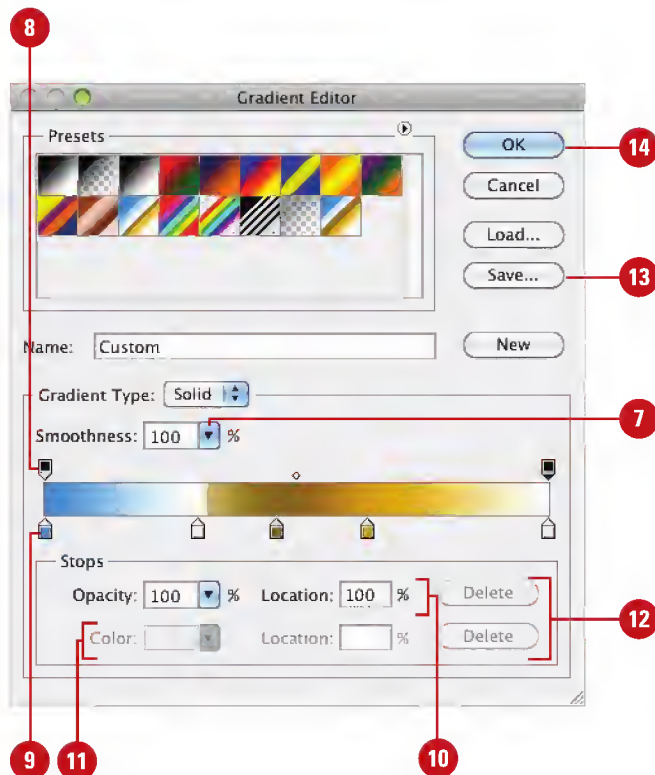
4 Enter a name for the new gradient.

5 Click **New**.

   A thumbnail (copy of the selected gradient) appears at the bottom of the list.

6 Click the **Gradient Type** list arrow, and then select one of the following:

   ◆ **Solid**. Uses solid colors for the gradient.

   ◆ **Noise**. Uses noise to distribute the colors.

7 Click the **Smoothness** list arrow, and then select one of the following:

◆ **Smoothness.** A percentage value (0% to 100%) that determines how smoothly the colors of the gradient blend together (available when the Solid option is selected).

◆ **Roughness.** A percentage value (0% to 100%) that determines how much noise to introduce into the gradient colors (available when the Noise option is selected).

8 To add Opacity Stops, click above the gradient line; to remove Opacity Stops, drag the stop away from the line.

8 To add Color Stops, click below the gradient line; to remove Color Stops, drag the stop away from the line.

10 Click on an Opacity Stop, and then enter an Opacity percentage (0% to 100%), and a Location percentage (0% to 100%) for the stop to place it on the line.

11 Click on a Color stop, and then select a color, and a Location percentage (0% to 100%) for the stop to place it on the line.

12 Click **Delete** to delete the selected opacity or color stop.

13 Click **Save** to save the new gradient set.

The set will include the new gradients, and all the gradients that appear in the Presets panel.

14 Click **OK**.

For Your Information

Creating a Customized Gradient

Gradients serve many purposes. They can be used to jazz up a shape drawn with Photoshop's drawing tools or they can be applied to an entire document and used as a background on a web page, brochure or newsletter. Whatever you use gradients for, remember that they are powerful image elements. Use gradients to attract attention to a document, but don't use them if they draw people's eyes away from the main elements of the image. It will be a small consolation to know that your fantastic marketing graphic attracted attention, but everyone was so focused on your special effects and gradients, they forgot to buy what you were selling. Remember, it's always about the message. An image is worth a thousand words...let the image tell its story.
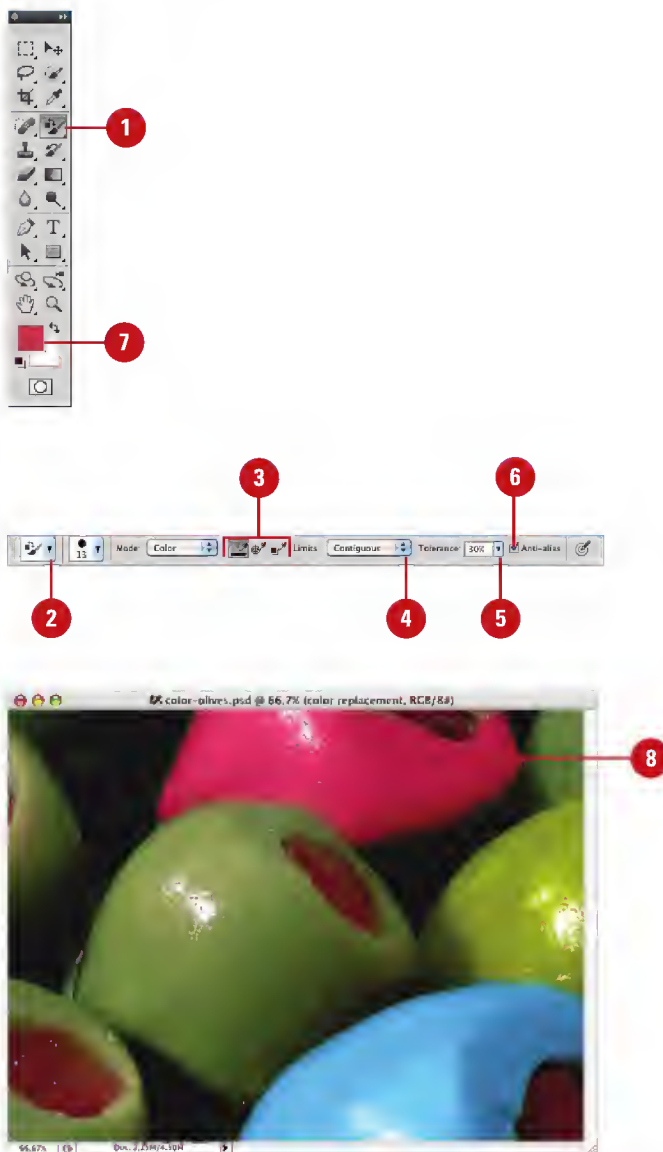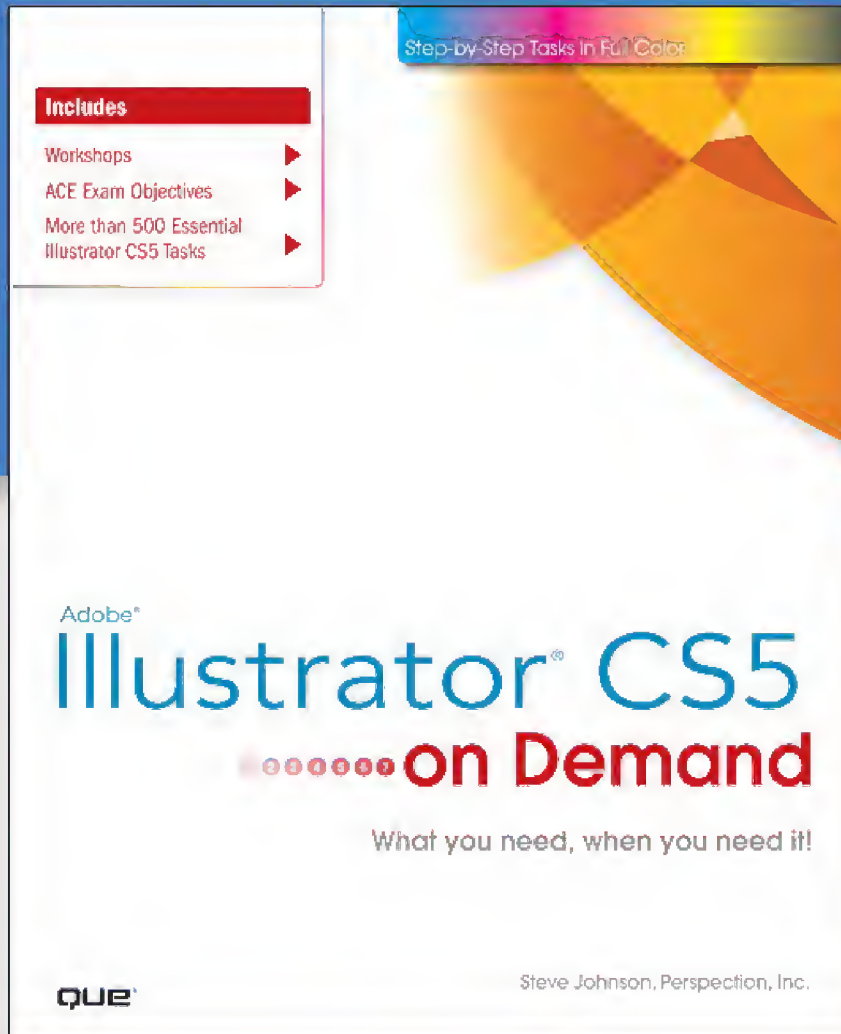
Using the Color Replacement Tool

The Color Replacement tool lets you replace a specific color in your image. For best results use soft brushes with this tool to help blend the colors into the original image. Have you ever captured that perfect picture of a family member or friend, only to find they have red eyes? Or maybe there's a part of your image where the color draws attention away from the focal point. Either way, the Color Replacement tool is a great feature that allows you to take control of the final image.

Use the Color Replacement Tool

1 Select the **Color Replacement** tool on the toolbox.

2 Select a Brush tip on the Options bar.

3 Select from the available Sampling options:

- ◆ **Continuous.** Samples colors continuously as you drag.
- ◆ **Once.** Replaces the targeted color only where you click.
- ◆ **Background Swatch.** Erases areas matching the background.

4 Select from the available Limits options:

- ◆ **Discontiguous.** Replaces the sampled color under the pointer.
- ◆ **Contiguous.** Replaces connected areas containing the sampled color and preserves the sharpness of shape edges.
- ◆ **Find edges.** Limits painting of the replacement color within an object as defined by its edges.

5 Enter a Tolerance percentage value (0% to 255%).

6 Select the **Anti-alias** check box for a smoother edge on areas you correct.

1 Select a foreground color to use to replace the unwanted color.

6 Drag in the image over the color you want to replace.

Working with Objects

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Working with Objects

Introduction

Adobe Illustrator is an application that gives you great control over vector graphics, which include vector shapes and vector objects. Vector graphics are created using mathematical shapes, not pixels, and that's why vector shapes are considered resolution-independent. When you draw a vector object, you create one or more lines called a path. A path is made up of one or more curved or straight line segments. The start and end points for a line segment is known as an anchor point, which you can drag to change and move.

Illustrator provides drawing tools on the Tools panel that you can use to create a variety of shapes, including rectangles, rounded rectangles, ellipses, polygons, stars, flares, lines, arcs, spirals, rectangle grids, and polar (circular) grids. After you draw an object, you can use Illustrator selection tools to modify it. The two main selection tools are the Selection tool and the Direct Selection tool. The Selection tool allows you to select entire objects, while the Direct Selection tool allows you to select paths and segments. In addition to these tools, you can also use the Select menu. The Select menu provides a variety of powerful selection commands for you to use in a document or artboard. For example, you can select objects whose attributes (including Appearance, Blending Modes, Fill & Stroke, Opacity, and Stroke Color) are similar to the current or last selection.

After you select one or more objects, you can move, align, group, and transform them. The transformation tools allow you to rotate, scale (resize), reflect (mirror image), or shear (slant) an object.

What You'll Do

Understand Vector and Raster Images

Understand Paths

Select a Drawing Mode

Create Pixel Aligned Objects

Create Rectangle and Ellipses

Create Polygons and Stars

Create Line Segments

Create Arcs, Spirals, and Grids

Use the Shape Builder Tool

Create Perspective Objects

Use the Selection Tool

Use the Direct Selection Tool

Use the Lasso Tool

Use the Magic Wand Tool

Select and Group Objects

Save and Edit Selections

Move and Duplicate Objects

Align and Distribute Objects

Transform Objects

Rotate, Scale, Reflect, or Shear Objects

Apply Multiple Transformations
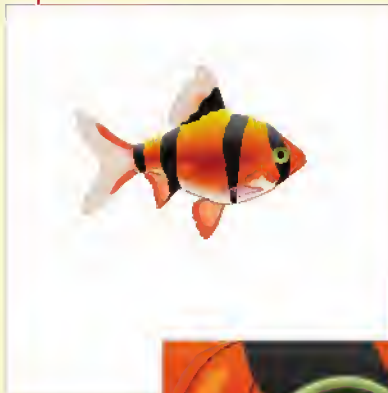
Reshape Objects with Envelopes

Understanding Vector and Raster Graphics

Illustrator is an application that gives you great control over vector graphics, which include vector shapes and vector objects. Vector graphics are created using mathematical shapes, not pixels, and that's why vector shapes are considered resolution-independent. For example, if you enlarge a vector image to 100 times its original size, Illustrator merely changes the mathematical formulas to reflect the new size, and since vector shapes are constructed of mathematical data instead of pixels, file sizes are extremely small.

Raster graphics, such as bitmaps and photographs, are images creating using individual pixels that identify one piece of color information. The reason raster images are considered resolution-dependent is that once the image is created or scanned, any enlargement of the image forces Illustrator to enlarge and average the existing color information in the document. This process, called **interpolation**, is what causes enlarged raster images to become blurred, or pixelated.

Vector Image

Raster Image

Close up shows lines

Close up shows pixels
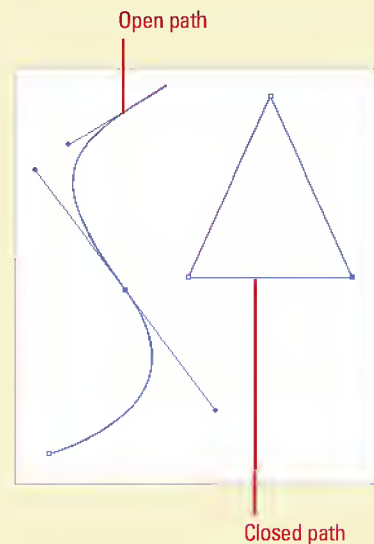
Understanding Paths

When you draw an object, you create one or more lines called a **path**. A path is made up of one or more curved or straight lines, known as **segments**. The start and end points for a segment is called an **anchor point**. An anchor point is a bending point to modify the line segment. A path can be open or closed. An open path has open-ended endpoints, such as a line, while a closed path has connected end-points, such as a circle. Paths can have two types of anchor points: smooth points or corner points. A smooth point connects two curved segments to create a smooth line, while a corner point connects two straight or curved segments to create a path direction change. You can draw a path using both smooth and corner points. The outline of a path is called a stroke, which you can format with different characteristics. You can specify stroke weight (thickness), color, or a dashed pattern. The interior of an open or closed path is called a fill, which you can also format with a color or gradient.

You can change the shape of a path by dragging its anchor point. A selected anchor point or endpoint appears as a solid square, while an unselected one appears as a white square. When you select an anchor point with a curved segment, a direction line appears with direction points on each end, which you can drag to change the shape of the path. When you change the shape of a smooth point with curved segments on each side, both segments get changed. When you change a shape of a corner point, the corner is maintained, but adjusted based on the change.

Working with Anchor Points

In Illustrator, you can show or hide anchor points, direction lines, and direction points by choosing the **View** menu, and then choosing **Show Edges** or **Hide Edges**. If you want to show or hide direction lines for selected anchor points, select the **Direct Selection** tool, select the anchor point that you want, and then click **Show Handles For Multiple Selected Anchor Points** or **Hide Handles For Multiple Selected Anchor Points** button in the Control panel.

You can specify options in the Selection & Anchor Display preferences to always show handles when multiple anchor points are selected (this option is turned off by default).

Open path

Closed path

Selecting a Drawing Mode

In Illustrator, you can specify how and where you want to draw an object. You can draw on top of an object, behind an object, or inside an object using one of the following drawing modes (**New!**): Draw Normal, Draw Behind, or Draw Inside. Draw Normal mode is the default drawing mode and the one used in previous versions of Illustrator. The Draw Behind mode allows you to draw behind all objects on a selected layer (no other objects selected). If an object is selected, the new object is drawn directly behind it. The Draw Inside mode allows you to draw inside a single selected object, which automatically creates a clipping mask from the select object. You can select a drawing mode at the bottom of the Tools panel or use the Shift+D keyboard shortcut to cycle through each one.
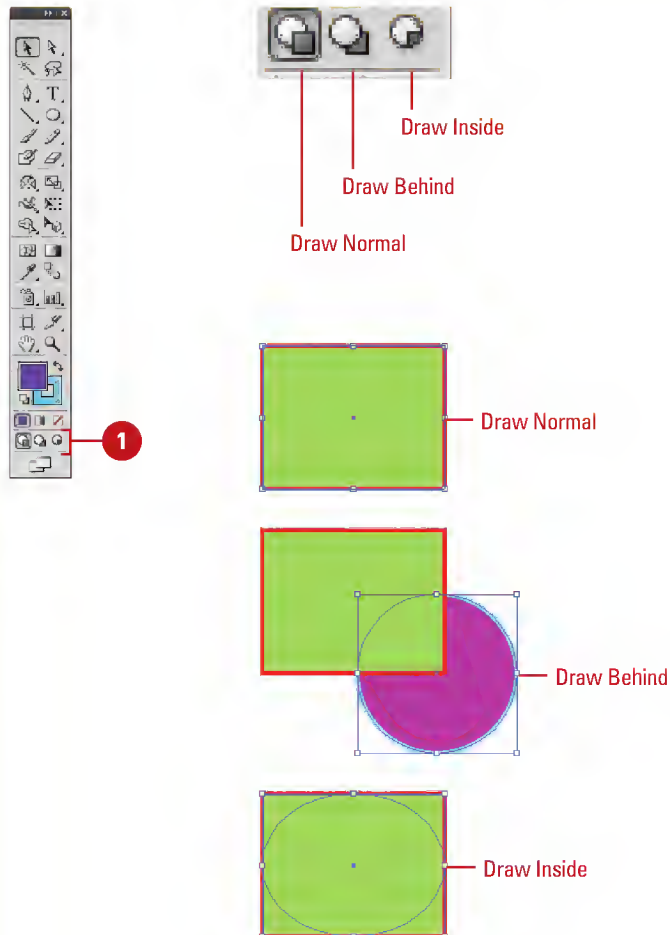
Select a Drawing Mode

1 Select the **Drawing Mode** tool on the Tools panel:

- ◆ **Draw Normal.** Draws an object on top of any other object; the default mode.

- ◆ **Draw Behind.** Draws an object behind all objects (no selection) or directly behind a selected object.

- ◆ **Draw Inside.** Draws an object inside a single selected object.

TIMESAVER *Press Shift+D to cycle through the Drawing Mode tools.*

Did You Know?

You can create a clipping mask using the Draw Inside mode. Select the path you want to draw, and then click the Draw Inside mode button on the Tools panel. Subsequent paths are clipped by the selected path until you switch to the Draw Normal mode. The clipping masks created using the Draw Inside mode retain the appearance on the clipping path unlike the Make command on the Clipping Mask submenu on the Object menu.

Draw Inside

Draw Behind

Draw Normal

Draw Normal

Draw Behind

Draw Inside

Creating Pixel Aligned Objects

Pixel aligned vector objects (**New!**) allow you to create precisely drawn images that look crisp and sharp for use on different outputs, such as the Web and mobile devices. The Align to Pixel Grid option enables the vertical and horizontal segments of the paths of an object to be nudged and aligned to the pixel grid. The stroke width become full integer values to create crisp paths. To view the pixel grid, zoom to 600% or higher in Pixel Preview mode. The Align to Pixel Grid option remains enabled with the object until it's disabled. You can set the option in the Advanced section of the New Document dialog box or the Options menu on the Transform panel. The option in the New Document dialog box, applies it any new objects in the document. You cannot pixel-align objects without paths, such as rasters, raster effects, and text objects.
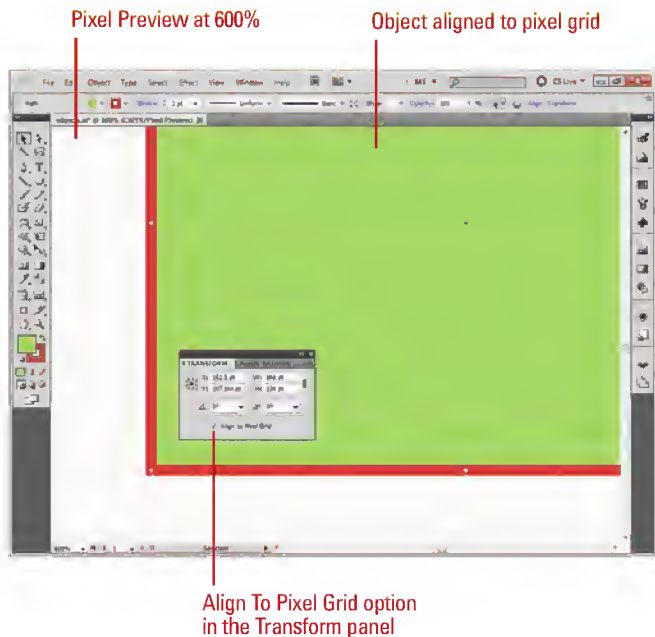
Work with Pixel Aligned Objects

◆ **Align All Objects in a New Document.** Click the **File** menu, click **New**, specify new document settings, select the **Align New Objects To Pixel Grid** check box in the Advanced section, and then click **OK**.

◆ **Align Existing Objects.** Select the object, open the Transform panel, and then select the **Align To Pixel Grid** check box.

◆ **Not Align Objects.** Select the objects you want to change, click the **Select** menu, point to **Object**, and then click **Not Aligned To Pixel Grid**.

◆ **View The Pixel Grid.** Click the **View** menu, click **Pixel Preview**, and then zoom to 600% or higher (**New!**).

   ◆ To set preferences for viewing pixel grid, click the **Illustrator** (Mac) or **Edit** (Win) menu, point to **Preferences**, click **Guides & Grid**, select the **Show Pixel Grid (Above 600% Zoom)** check box, and then click **OK** (**New!**).

Pixel Preview at 600%

Object aligned to pixel grid

Align To Pixel Grid option in the Transform panel

Creating Rectangles and Ellipses

The Illustrator Tools panel includes several tools for quickly creating simple geometric vector shapes. They are easy to use; you just click and drag on the Stage to create the shapes. The Rectangle tool creates rectangles with square or rounded corners. The Ellipse tool creates circular shapes such as ovals and circles. These shapes can be comprised either of Strokes, which are lines that surround and define the shape, or Fills, which can be a color or texture inside the shape, or both.
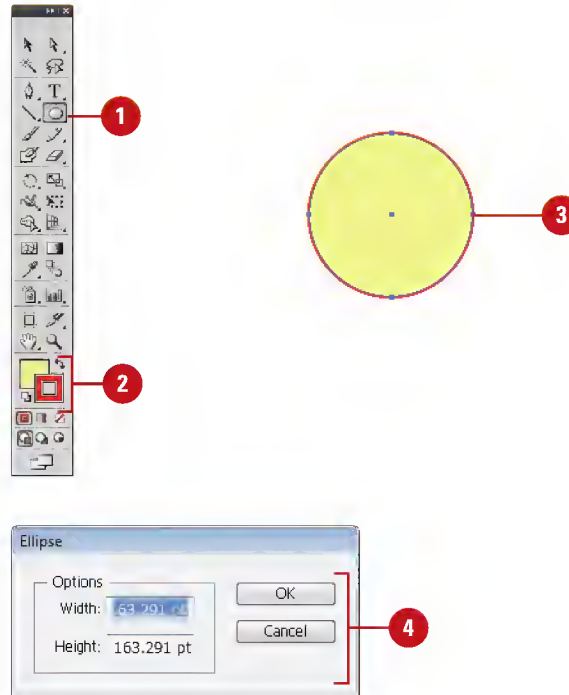
Draw an Ellipse or Circle

1 Select the **Ellipse** tool on the Tools panel.

> **TIMESAVER** *Press L to select the Ellipse tool.*

2 Select a **Stroke** and **Fill Color** from the Colors area of the Tools panel.

3 Click and drag on the artboard, and then release the mouse.

> **TIMESAVER** *Press and hold Shift while you drag to create a circle.*

4 To create an oval or circle with a specific width and height, click on the artboard where you want the top left corner, enter width and height values, and then click **OK**.

Did You Know?

You can enter values ranging from 0 to 100 points in the Rounded Rectangle Settings dialog box. A value of zero gives you a straight-sided-square. Higher numbers produce squares with more rounded sides.

You can draw shapes without a stroke or a fill. Set either of these properties to No Fill in the Colors section of the Tools panel or in the Color panel.

Draw a Rectangle or Rounded Rectangle

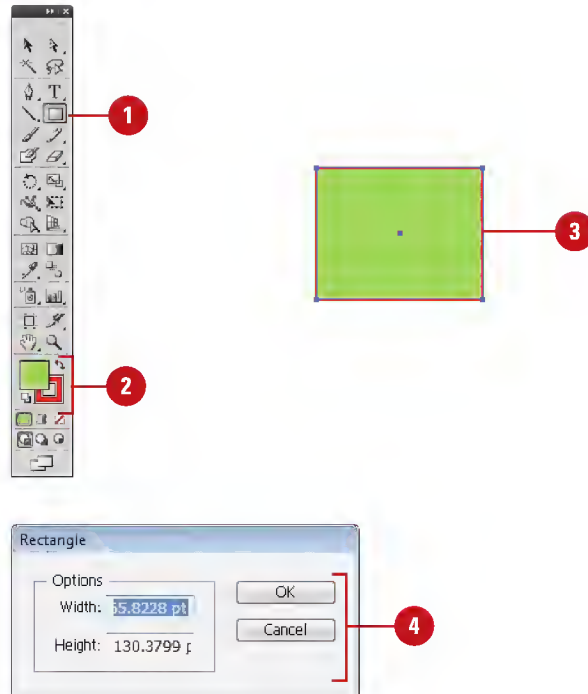**1** Click the **Rectangle** or **Rounded Rectangle** tool on the Tools panel.

> **TIMESAVER** *Press M to select the Rectangle tool.*

2 Select a **Stroke** and **Fill** color from the Colors area of the Tools panel.

3 Click and drag on the artboard, and then release the mouse.

> **TIMESAVER** *Press and hold Shift while you drag to create a square.*

4 To create a square, rectangle, or rounded rectangle with a specific width and height, click on the artboard where you want the top left corner, enter width and height values, and then click **OK**.

Did You Know?

You can change the corner radius for a rounded rectangle. While you drag a rounded rectangle, press the Up Arrow or Down Arrow key. To create square corners, press the Left Arrow key. To create corners with maximum roundness, press the Right Arrow key.

You can draw shapes with no stroke or fill. If you want to draw an oval or a rectangle without a stroke or fill, you can set either of these options to No Fill in the Colors area of the Tools panel or in the Color Mixer.

You can create a flare shape using the Flare tool. Select the Flare tool on the Tools panel, click and drag on the artboard, and then release the mouse.

Creating Polygons and Stars

The Polygon and Star tools work in much the same way as the Ellipse and Rectangle tools do to allow you to easily create complex vector shapes. You can use these tools to create either polygons or stars. Polygons are shapes based on a center radius and a number of sides, while stars are shapes based on two center radiuses: one for the distance from the center of the star to the innermost points, and another for the distance from the center to the outermost points. Experiment with several options to get the kind of shape you want.

Draw a Polygon or Star Shape

1. Select the **Polygon** or **Star** tool on the Tools panel.

   The pointer becomes a crosshair that you can drag anywhere on the artboard.

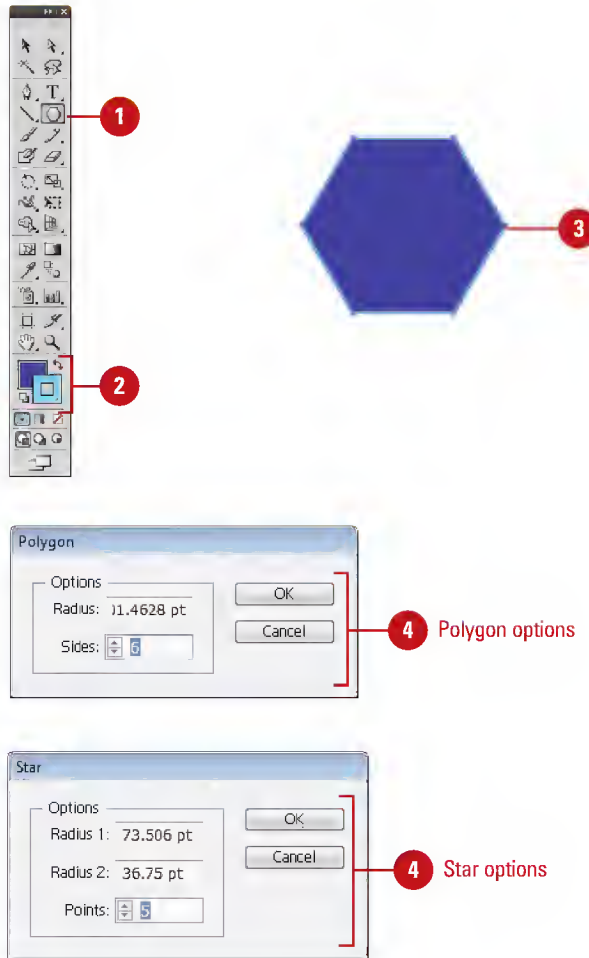2. Select a **Stroke** and **Fill** color from the Colors area of the Tools panel.

3. Click and drag on the artboard, and then release the mouse.

   TIMESAVER *Press and hold Shift while you drag to create a proportional shape.*

4. To create a shape with a specific radius and number of sides or points, click on the artboard where you want the center of the shape, enter the following values, and then click **OK**.

   ◆ **Polygon.** Enter a radius and number of sides for the polygon. To create a triangle, enter 3 sides.

   ◆ **Star.** Enter radius 1 for the distance from the center of the star to the innermost points and enter radius 2 for the distance from the center to the outermost points.

Polygon options

Star options

Creating Line Segments

The Line Segment tool draws perfectly straight lines in any direction you drag your mouse. In Illustrator, a line is called a stroke and there is a variety of thicknesses, styles, colors, and fills that can be applied to it. You can also create your own line style for specific types of dashed, dotted or artistic lines. You can constrain the path a line draws to 45-degree angles or create closed shapes by intersecting the lines you draw.

Draw a Line Segment

1 Click the **Line Segment** tool on the Tools panel.

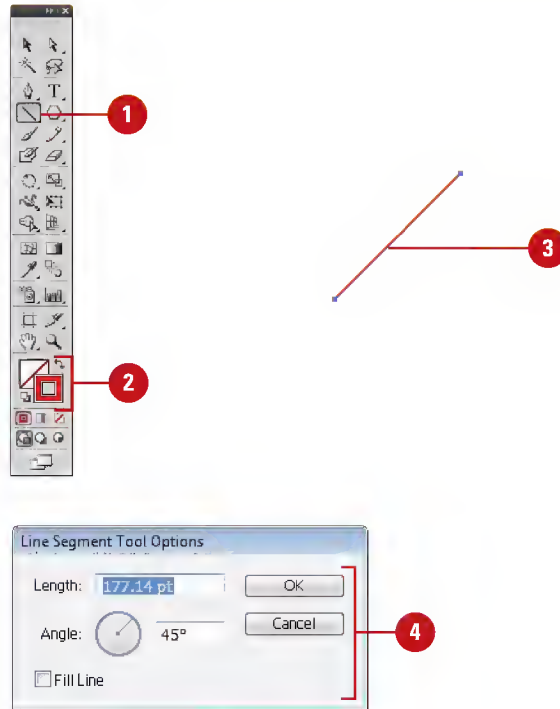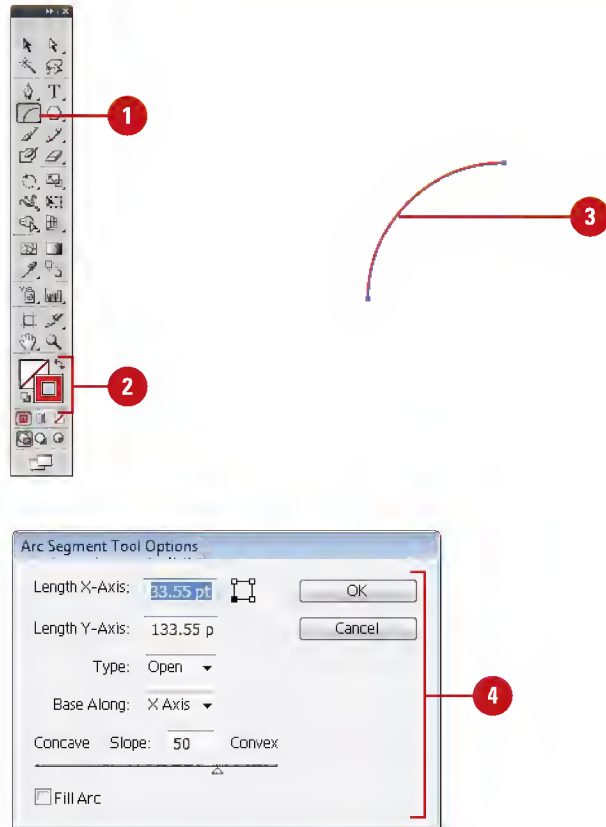The pointer becomes a crosshair that you can drag on the artboard.

TIMESAVER *Press \ to select the Line tool.*

2 Select a **Stroke** color from the Colors area of the Tools panel.

3 Click and drag on the artboard, and then release the mouse when the line is the length you need.

TIMESAVER *Hold down the Shift key, and then drag to draw a 45, 90, or 180 degree line.*

4 To create a line with a specific length and angle, click on the artboard where you want the line to begin, enter length and angle values, select the **Fill Line** check box to fill the line with the current fill color, and then click **OK**.
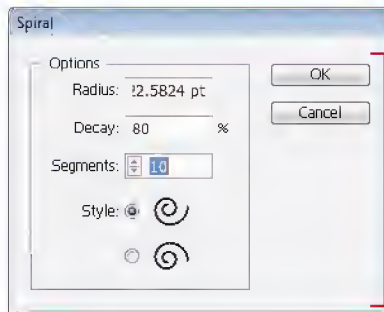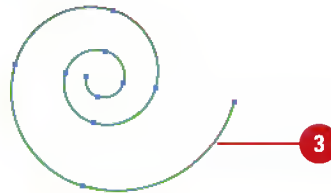
Creating Arcs and Spirals

The Arc and Spiral tools make it easy to create unique and interesting shapes. These tools draw curved lines to create an individual arc or a Spiral wind. An arc consists of an x and y axis length, open or closed path, arc direction (known as the Base Along), arc slope, and arc fill (optional). A Spiral consists of a radius from the center to the outermost point in the Spiral, decay (the amount each wind decreases), number of segments for the spiral, and Spiral style. Each full wind of a Spiral consists of four segments.

Draw an Arc

1. Click the **Arc** tool on the Tools panel.

   The pointer becomes a crosshair that you can drag on the artboard.

2. Select a **Stroke** color from the Colors area of the Tools panel.

3. Click and drag on the artboard, and then release the mouse when the arc is the length you need.

4. To create an arc with specific settings, click on the artboard where you want the arc to begin, enter x and y lengths, specify type (open or closed), arc direction (Base Along) and slope options, select the **Fill Arc** check box to fill the arc with the current fill color, and then click **OK**.

Draw a Spiral

1 Click the **Spiral** tool on the Tools panel.

The pointer becomes a crosshair that you can drag on the artboard.

2 Select a **Stroke** color from the Colors area of the Tools panel.

3 Click and drag on the artboard, and then release the mouse when the Spiral is the length you need.

4 To create a Spiral with specific settings, click on the artboard where you want the Spiral to begin, enter a radius (distance) from the center to the outermost point, decay percentage (amount of the wind decreases), the number of segments, and style options, and then click **OK**.

Creating Grids

The grid tools on the Tools panel allow you to create a rectangular or circular polar grid. The Rectangular Grid tool creates rectangular grids of a specified size and number of horizontal and vertical dividers. The Polar Grid tool creates concentric circles of a specified size and specific number of concentric and radial dividers.

Draw Rectangle Grids

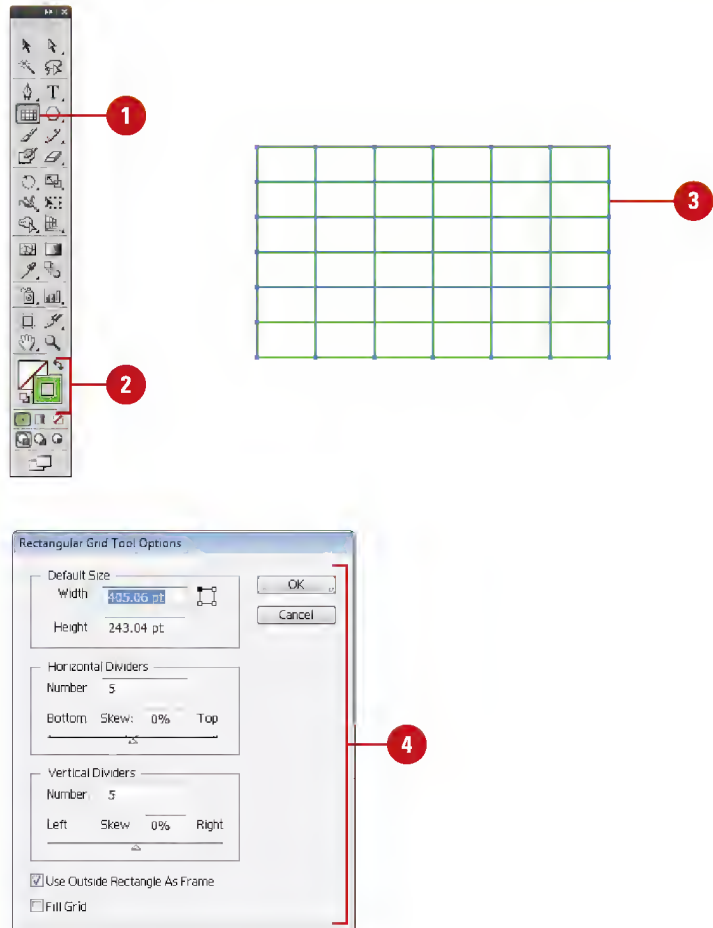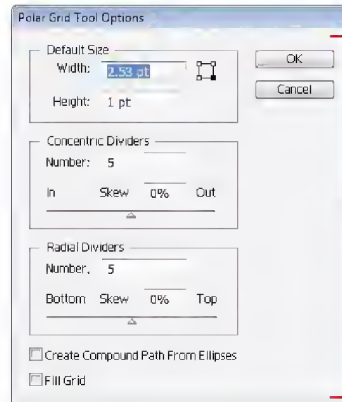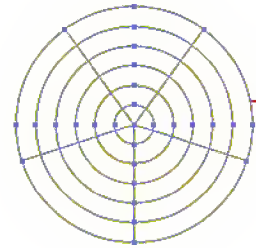1. Click the **Rectangle Grid** tool on the Tools panel.

    The pointer becomes a crosshair that you can drag on the artboard.

2. Select a **Stroke** color from the Colors area of the Tools panel.

3. Click and drag on the artboard, and then release the mouse when the grid is the size you need.

4. To create a grid with specific settings, click on the artboard where you want the grid reference point, enter a width and height for the grid, specify the number of horizontal and vertical dividers, select the **Use Outside Rectangle As Frame** check box to replace individual segments with a separate rectangle object, select the **Fill Grid** check box to fill the grid with the current fill color, and then click **OK**.

Draw Circular Polar Grids

1 Click the **Polar Grid** tool on the Tools panel.

The pointer becomes a crosshair that you can drag on the artboard.

2 Select a **Stroke** color from the Colors area of the Tools panel.

3 Click and drag on the artboard, and then release the mouse when the grid is the size you need.

4 To create a grid with specific settings, click on the artboard where you want the grid reference point, enter a width and height for the grid, specify the number of concentric and radial dividers, select the **Create Compound Path From Ellipses** check box to replace circles with separate compound paths, select the **Fill Grid** check box to fill the grid with the current fill color, and then click **OK**.

Using the Shape Builder Tool

The Shape Builder tool (**New!**) allows you to create complex objects by merging and erasing simpler objects. The Shape Builder tool selects edges and regions of an object, which can be merged or erased to form a new object. An edge is any section of a path that doesn't intersect the path of other selected objects and a region is a closed area. You can also break overlapping objects to create new ones. The style attributes of an object are adopted after the merge. By default, the Shape Builder tool is in merge mode, however, you can switch to erase mode by using the Option (Mac) or Alt (Win) key. Before you start using the Shape Builder tool, you can set up and customize options, such as coloring source, highlighting, and gap detection, to suit your own preferences.
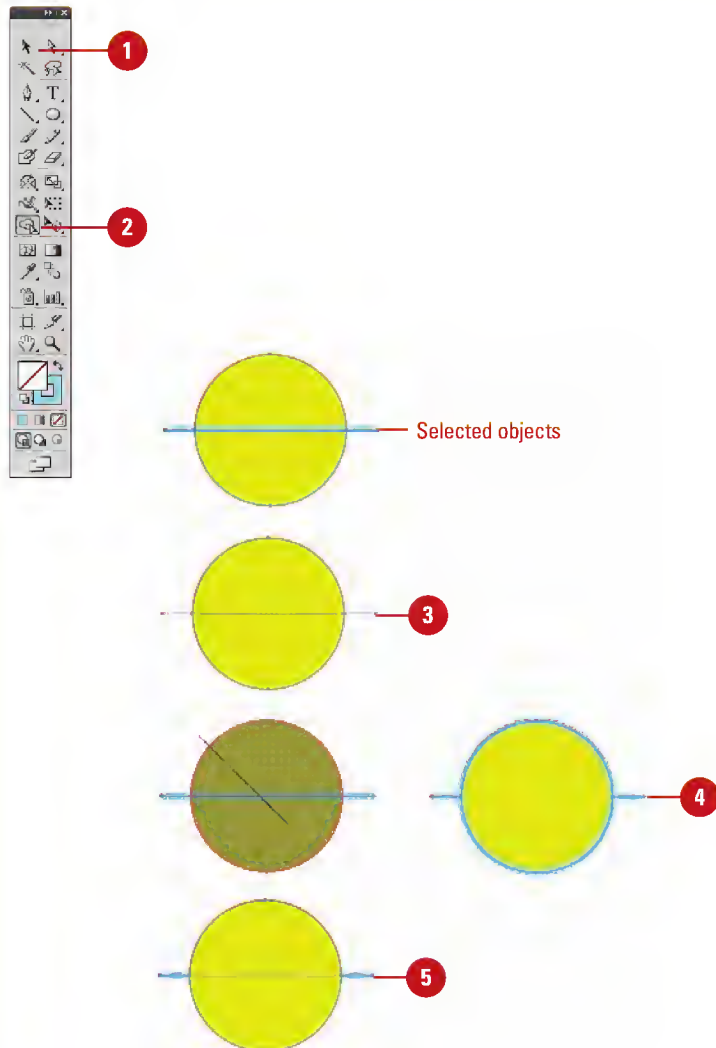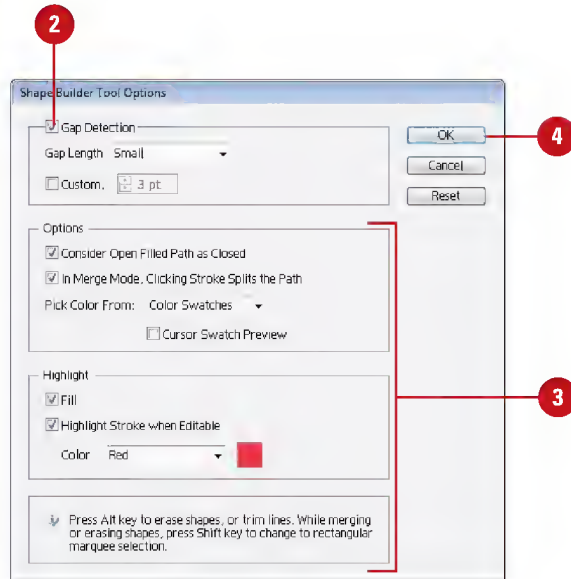
Create an Object with the Shape Builder Tool

1. Click the **Selection** tool on the Tools panel, and then select only the paths you want to merge to create a shape.

2. Click the **Shape Builder** tool on the Tools panel. By default, merge mode is selected.

3. To break or extract a region from the shape, click the selected region.

4. To merge paths, drag along the region.

   The two regions get merged to form a new shape. The attributes from the region are applied to the merging shapes.

   TIMESAVER *Press Shift as you drag, displays a rectangle marquee for merging multiple paths.*

5. To erase paths, press Option (Mac) or Alt (Win) and click the closed region or edge you want to delete.

Selected objects

Set Shape Builder Tool Options

1 Double-click the **Shape Builder** tool on the Tools panel.

2 To detect and show the gap between objects, select the **Gap Detection** check box, and then select a **Gap Length**, either **Small** (3 points), **Medium** (6 points), or **Large** (12 points), or select the **Custom** check box and specify a point size length.

> **IMPORTANT** *Make sure the gap length value is close to the actual gap length, otherwise Illustrator may not detect it.*

3 Specify the Options and Highlight settings you want:

◆ **Consider Open Filled Path as Closed.** Select to create an invisible edge for an open path to make a region.

◆ **In Merge Mode. Clicking Stroke Splits the Path.** Select to split the parent path into two; the first edge you click specifies the split location.

◆ **Pick Color From.** Select **Color Swatches** or **Artwork** as the source for coloring objects. If you select Color Swatches, select the **Cursor Swatch Preview** check box to preview and select colors.

◆ **Fill.** Select to highlight the merged area in gray or mouse over the selected path.

◆ **Highlight Stroke When Editable.** Select to highlight strokes you can edit in the color you select.
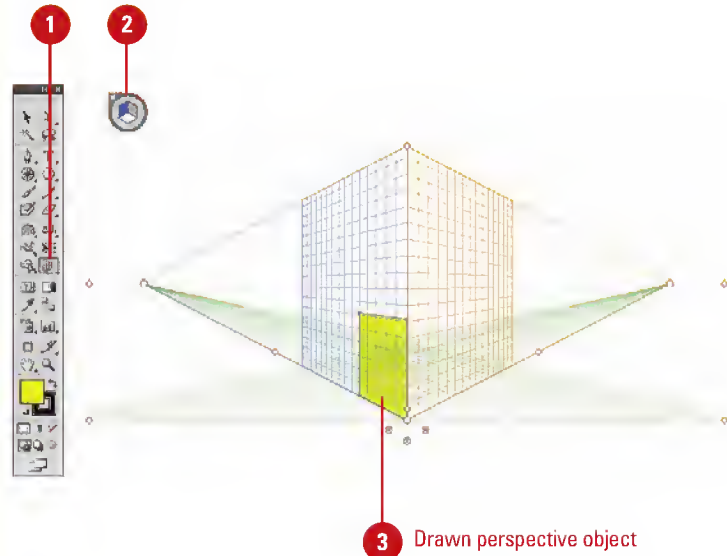
4 Click **OK**.
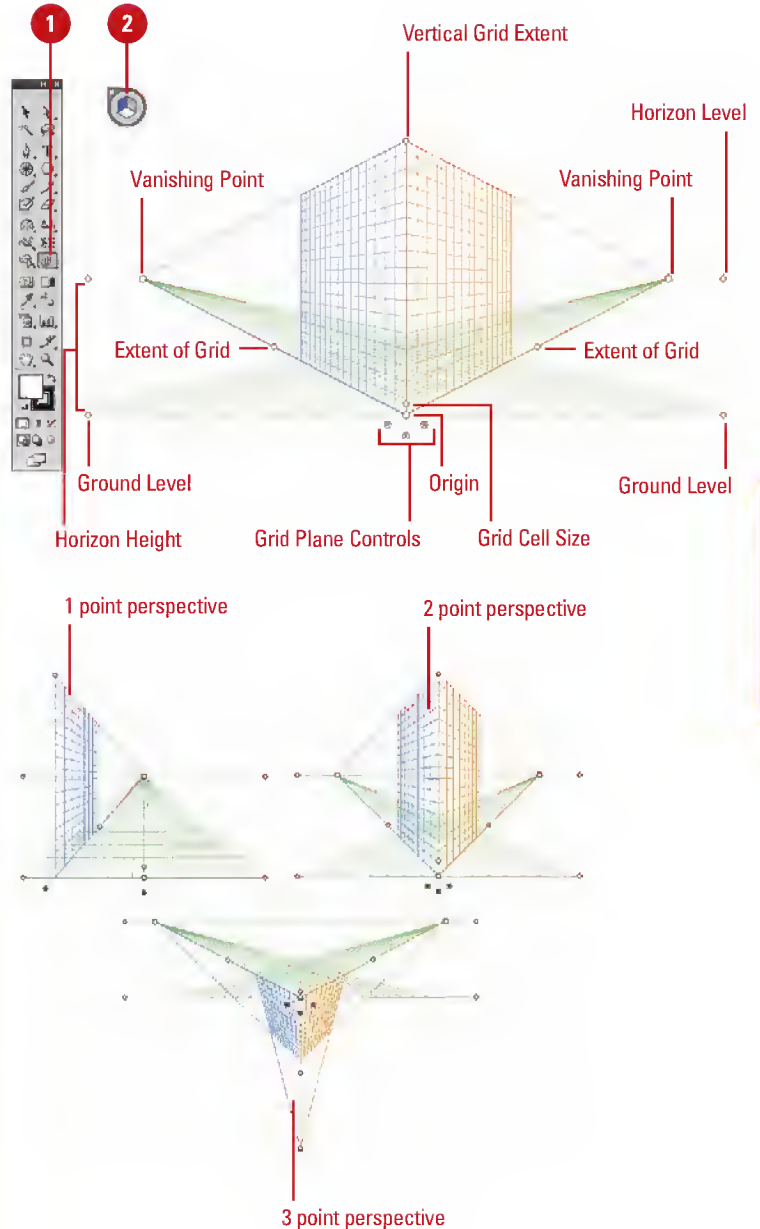
Creating Perspective Objects

The Perspective Grid tool (**New!**) allows you to display a perspective grid that you can use to draw shapes and create scenes with 1, 2, or 3-point perspective. For example, you can create a row of trees down a street to create perspective. The perspective grid provides presets with a 1, 2, or 3-point perspective to help you get started. You can change the viewing angle and distance along with widgets to control vanishing points, horizon height, ground level, and the origin. You can draw objects directly on the perspective grid or attach existing ones to it. If you want to match the depth or height of an existing perspective object, you can use the Move Plane To Match Object command to adjust the grid, so you can draw or adjust another object to it.

Draw Perspective Objects

1 Click the **Perspective Grid** tool on the Tools panel.

 ◆ If the grid doesn't appear, click the **View** menu, point to **Perspective Grid**, and then click **Show Grid**.

2 To select a perspective grid preset, click the **View** menu, point to **Perspective Grid**, point to a Point Perspective (One, Two, or Three), and then select a preset.

3 To draw objects on the grid, do any of the following:

 ◆ **Draw Perspective Objects.** Select a Line tool (other than the Flare tool) or Rectangle tool, and then drag to draw it.

 ◆ **Attach Normal Objects.** Select the plane to which you want to use, select the normal object, click the **Object** menu, point to **Perspective**, and then click **Attach to Active Plane**.

 ◆ **Release Perspective Objects.** Select the attached object, click the **Object** menu, point to **Perspective**, and then click **Release with Perspective**.

 ◆ **Move Plane to Match Objects.** Select the existing object, click the **Object** menu, point to **Perspective**, and then click **Move Plane To Match Object**.

Drawn perspective object

Adjust the Perspective Grid

1 Click the **Perspective Grid** tool on the Tools panel.

- ◆ If the grid doesn't appear, click the **View** menu, point to **Perspective Grid**, and then click **Show Grid**.

2 To select the active grid plane, click a plane in the cube (Right, Left, or Horizontal) in the Plane Switching Widget. Click the area outside the cube to select no plane.

3 To adjust the perspective grid, drag the left or right controls on the grid for any of the following:

- ◆ **Ground Level.** Moves the perspective grid.

- ◆ **Vanishing Points.** Adjusts the perspective in or out.

- ◆ **Horizon Height.** Adjusts the horizon line up or down.

- ◆ **Extend the Grid.** Extends or shortens the perspective grid.

- ◆ **Grid Plane Controls.** Adjust the Right, Horizontal, or Left.

- ◆ **Grid Cell Size.** Increases or decreases the grid cell size.

- ◆ **Origin.** Adjusts the X and Y coordinates of the grid plane.

4 To set perspective grid related options, click the **View** menu, point to **Perspective Grid**, and then click any of the following:

- ◆ **Show/Hide Rulers.** Shows or hides the ruler on the height line.

- ◆ **Snap to Grid.** Snaps an object to a perspective gridlines.

- ◆ **Unlock/Lock Grid.** Unlocks or locks the perspective grid.

- ◆ **Lock Station Point.** Locks the station point in place. When you move one vanishing point, the other one moves in sync.
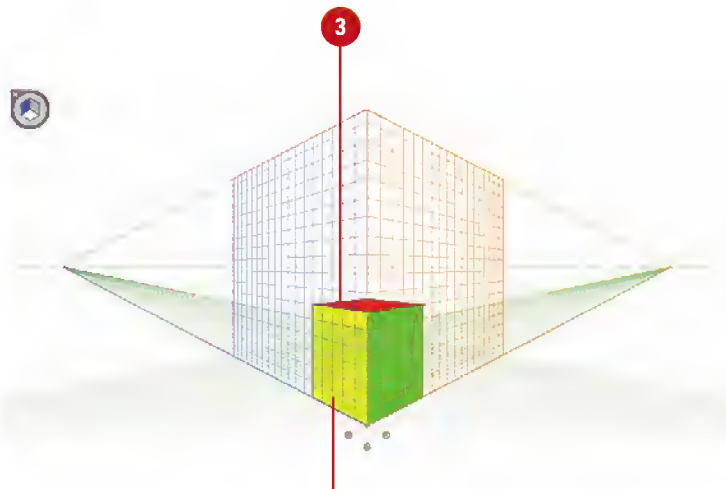

Vertical Grid Extent

Horizon Level

Vanishing Point

Vanishing Point

Extent of Grid

Extent of Grid

Ground Level

Origin

Ground Level

Horizon Height

Grid Plane Controls

Grid Cell Size

1 point perspective

2 point perspective

3 point perspective

Working with Perspective Objects

The Perspective Selection tool (**New!**) allows you to select, move, scale, copy, and transform objects in perspective. You can also add normal objects, text, and symbols to the perspective grid. When you move or change a normal object to the perspective grid, its appearance and scale change to adhere to the grid. You can select perspective objects in the grid with the Perspective Selection tool by clicking individual objects or dragging a selection marquee, just like normal objects.

Modify Perspective Objects

1 Click the **View** menu, point to **Perspective Grid**, and then click **Show Grid**.

2 Click the **Perspective Selection** tool on the Tools panel.

3 To work with perspective objects on the grid, do any of the following:

◆ **Move Perspective Objects.** Select the object, and then drag it to another position or use the Arrow keys. Press tilde (~) to constrain the move to parallel.

◆ **Move or Copy Perspective Objects and Grid Plane.** Double-click a grid plane control, click the **Move All Objects** or **Copy All Objects** option, click **OK**, and then drag the grid plane control.

◆ **Copy Perspective Objects.** Select the object, and then Option+drag (Mac) or Alt+drag (Win) it to another position.

◆ **Resize Perspective Objects.** Select the object, and then drag a resize handle.

◆ **Add Normal Objects.** Select the active plane, and then drag the normal object to the plane.

◆ **Add Text and Symbols.** Select an existing normal text or symbol, and then drag it on the active plane. To modify the text and symbols, use the **Edit Text**, **Edit Perspective**, and **Isolate Selected Object** buttons on the Control panel.

Three perspective object on the grid; they were moved, copied and resized.

Customizing a Perspective Grid

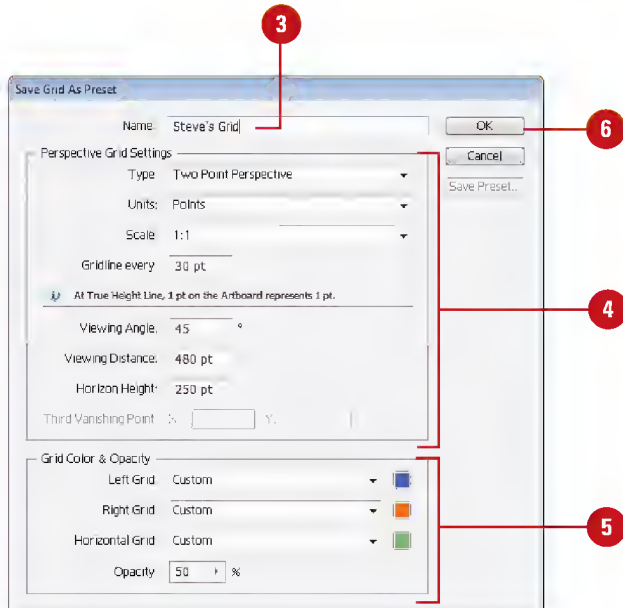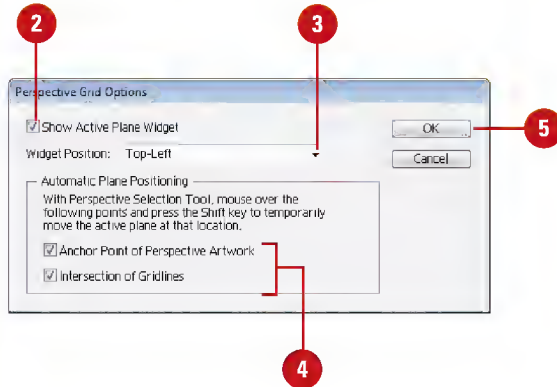If you create your own perspective grid, you save it as a preset (**New!**) for use later. You can create a perspective grid by using the Define Grid command to set exacting measurements and options or by manually adjusting an existing grid, and then saving it as a preset, which you can edit at any time. When you create or work with an existing perspective grid, you can set grid options (**New!**) to show or hide the active plane widget, change the widget position, and specify which points you want to use to temporarily hide the active plane with the Shift key.

Set Perspective Grid Options

1. Double-lick the **Perspective Grid** tool on the Tools panel.

1. Select the **Show Active Plane Widget** check box to display it.

3. Click the **Widget Position** list arrow, and then select a position.

4. Select the **Anchor Point Of Perspective Artwork** or the **Intersection Of Gridlines** check boxes to specify the points where you want to temporarily hide the active plane with the Shift key.

5. Click **OK**.

Create a Perspective Grid Preset

1. Click the **View** menu, point to **Perspective Grid**, and then click **Define Grid** to create a grid (steps 3 thru 6) or manually create one.

1. Click the **View** menu, point to **Perspective Grid**, and then click **Save Grid As Preset**.

3. Type a name for the preset.

4. Specify the perspective grid settings you want.

5. Specify the grid color & opacity settings you want.

5. Click **OK**.

1. To edit a grid preset, click the **Edit** menu, click **Perspective Grid Presets**, select a preset, click **Edit**, make changes, and then click **OK**.
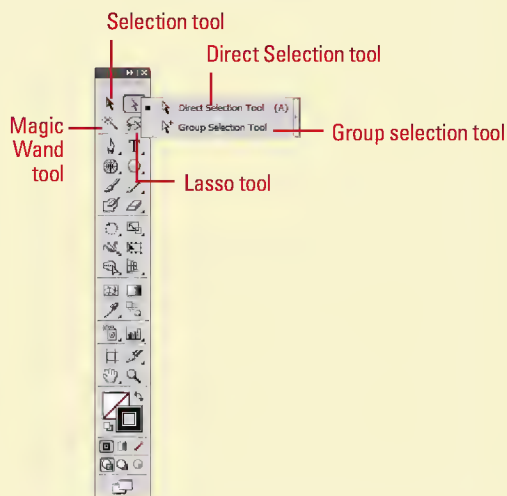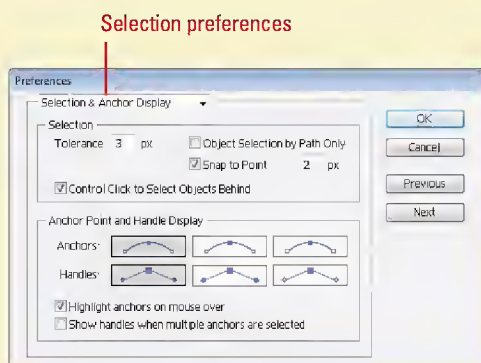
Understanding Selections

When you create vector graphics in Illustrator, they are comprised of distinct segments that can be selected separately or as a whole with a variety of selection tools. The type of editing you need to perform determines which tool you use. For example, a simple rectangle is comprised of four line segments that surround the contour of the shape and one fill in the center. Each of these parts can be selected as a group with the **Selection** tool or individually with the **Direct Selection** tool. To select an object using the fill, you need to deselect the Object Selection by Path Only check box in Selection & Anchor Display preferences. If an object is behind another object, you can use the keyboard shortcut ⌘+click (Mac) or Ctrl+click (Win) to select it (**New!**). The pointer changes to an arrow with a small caret on the first ⌘/Ctrl+click; as you continue to click the selection moves through the objects under the pointer. To use this option, you need to select the Control Click to Select Objects Behind check box in Selection & Anchor Display preferences.

In addition to the Selection and Direct Selection tools, you can also use the **Group Selection** tool to select all the anchor points on a single path. With the Group Selection tool, click to select an object, click twice to select the object's group, and click three times to select the group within the group (if available). The Group Selection tool is useful for working with multiple objects. If you want to work with an individual object without affecting other objects, it's better to use Isolation Mode.

The **Lasso** tool is a classic selection tool that allows you to select path points and segments by dragging a freeform marquee around them.

The **Magic Wand** tool allows you to select objects of the same or a similar fill color, stroke color, stroke weight, opacity, or blending mode.

Selection preferences

Selection tool

Direct Selection tool

Magic Wand tool

Group selection tool

Lasso tool

Using the Selection Tool

There are several ways to select objects in Illustrator. With the Selection tool, you can select an object's stroke or fill. You can only select an object using the fill if the path appears in Preview mode, and the Object Selection by Path Only check box is deselected in Selection & Anchor Display preferences. After you select one or more objects, you can add or subtract objects to/from the selection. In addition, you can use the Selection tool and drag a marquee to select parts of the object or drag over a portion of it to create a selection rectangle.
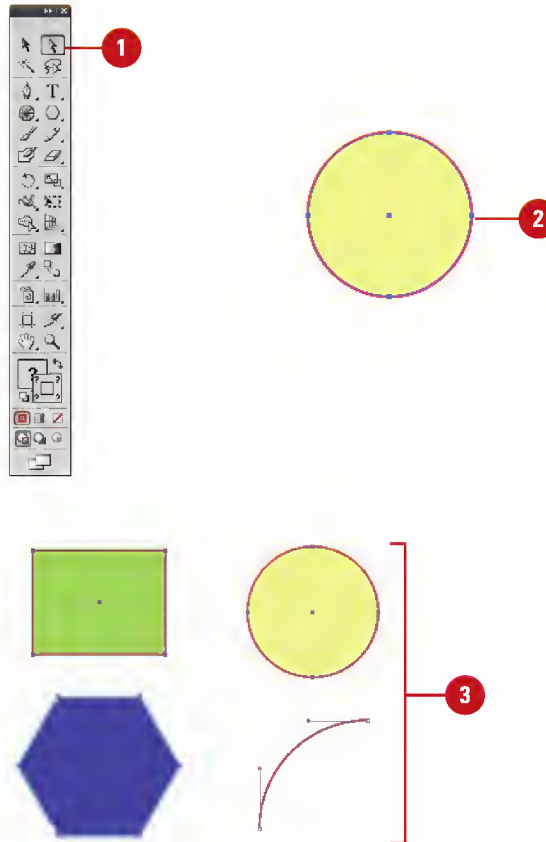
Select an Object with the Selection Tool

1 Click the **Selection** tool on the Tools panel.

The pointer becomes an arrow.

TIMESAVER *Press V to select the Selection tool.*

2 Position the arrow on the edge of the object, and then click it.

◆ You can also drag a marquee across all or part of the object to select the entire path.

◆ If the path has a color fill, appears in Preview mode, and the Object Selection by Path Only check box is deselected in Selection & Anchor Display preferences, you can also click the fill to select the object.

3 To add or subtract objects from the selection, hold down the Shift key, and then click unselected objects to add or click selected objects to subtract them from the selection.

Using the Direct Selection Tool

With the Direct Selection tool, you can select individual points and segments of a path. After you select one or more individual points and segments, you can add or subtract items to/from the selection. In addition, you can also use the Direct Selection tool and drag a marquee to select parts of the path or drag over a portion of it to create a selection rectangle.
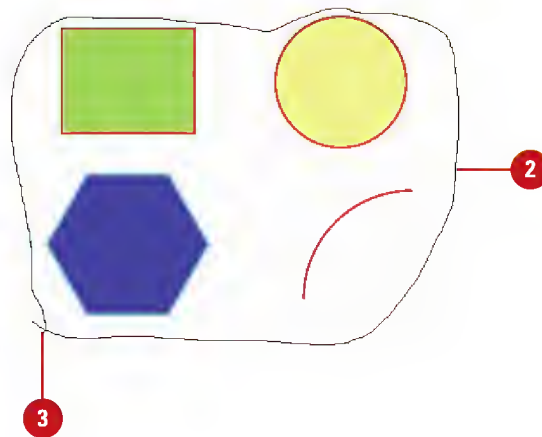
Select Anchor Points and Segments with the Direct Selection Tool

1 Click the **Direct Selection** tool on the Tools panel.

The pointer becomes an arrow.

TIMESAVER *Press A to select the Direct Selection tool.*

2 Position the arrow on the edge of the path and click to select a segment, and then click an anchor point to select it.

◆ You can also select an anchor point directly. Pass the pointer over a path and then point to an anchor point and then click it.

◆ You can also drag a marquee across all or part of the object to select the entire path.

3 To add or subtract anchor points or segments from the selection, hold down the Shift key, and then click unselected items to add them or selected items to subtract them from the selection.

Using the Lasso Tool

Use the Lasso tool when you want to select shapes that are very close to shapes you don't want to select. This tool allows you to draw around the shape, selecting everything contained within the drawn area. When you draw a selection, you can drag across a path to include it in the selection instead of dragging completely around it. This selection tool is useful when you are working with overlapping paths.
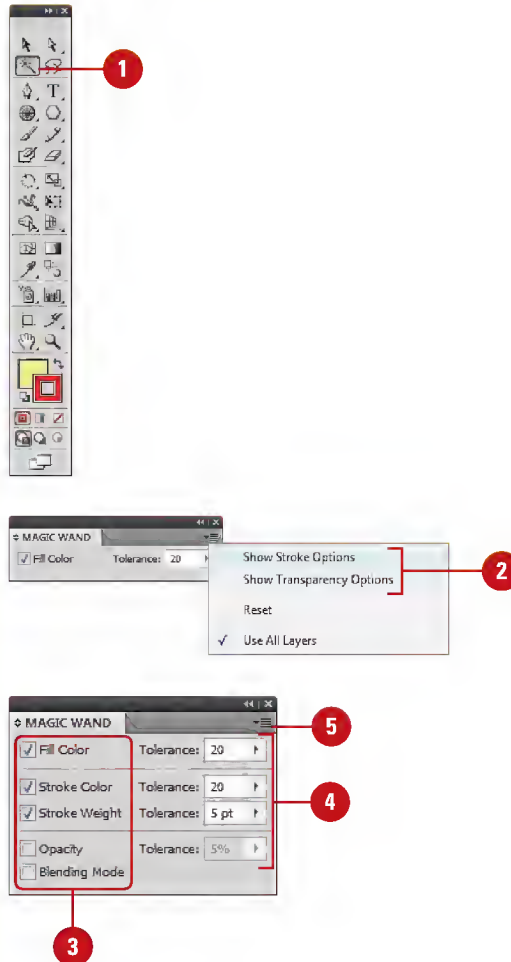
Select with the Lasso Tool

1. Click the **Lasso** tool on the Tools panel.

2. Draw around the shapes you want to select.

3. To complete the selection, return to the point where you started.

Did You Know?

You can select single or multiple objects. Holding the Shift key adds line segments and fills them. Shift-clicking selected items deselects them.

Using the Magic Wand Tool

The Magic Wand tool (so named since it looks like a magic wand) is unique in the fact that you do not drag and select with this tool; you simply click. The Magic Wand tool creates a selection based on the shift in brightness ranges within an image. If there is a definable shift in the brightness of the pixels, it can be a very powerful tool for the selection of odd-shaped areas. To use the Magic Wand, click on the Magic Wand Tool button on the Tools panel.
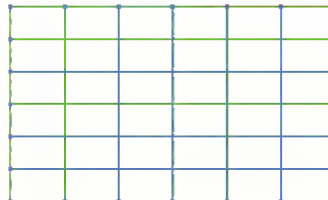
Select Options for the Magic Wand Tool

1. Double-click the **Magic Wand** tool on the Tools panel.

   ◆ You can also click the **Window** menu, and then click **Magic Wand** to display the panel.

2. Click the **Options** menu, and then select the **Show Stroke Options** and **Show Transparency Options** (if necessary) to display them in the Magic Wand panel.

   ◆ You can also click the double-arrow next to the Magic Wand title to display options.

3. Select the check box for the attributes that you want the Magic Wand to select. The options include: **Fill Color**, **Stroke Color**, **Stroke Weight**, **Opacity**, or **Blending Mode**.

4. Enter a Tolerance value (0 to 255). The higher the value, the more information the Magic Wand tool selects.

5. To select objects on all layers, click the **Options** menu, and then select **Use All Layers** to check it. Select it again to select objects only on the current layer.

6. To reset all fields in the Magic Wand panel, click the **Options** menu, and then click **Reset**.

Use the Magic Wand Tool

1 Select the **Magic Wand** tool on the Tools panel.

2 Click an object area to make a selection.

Depending on the options you selected in the Magic Wand panel, other objects with the same or similar attributes (fill color, stroke color, stroke weight, opacity, or blending mode) are selected.

3 To add to the selection, hold down the Shift key, and then click another unselected object.

To subtract from the selection, hold down the Alt (Win) or Option (Mac) key, and then click a selected object.

Selecting and Grouping Objects

Selecting and grouping objects makes it easier to work with multiple objects as if they were a single object. You can easily select, isolate, cut, copy, paste, move, recolor, and transform a grouped object. You can group all types of objects, yet still edit individual objects within the group as needed without having to ungroup them first by using Isolation Mode. Illustrator places a grouped object on the top level of the top object in the group and uses the same selection color. If you no longer need to group objects, you can ungroup them.

Create a Group

1. Select the **Selection** tool on the Tools panel.

2. Use a selection method to select the objects that you want in the group.

3. Click the **Objects** menu, and then click **Group**.

   ◆ You can use the Group command again to group objects already in a group; this is known as a nested group.

Ungroup Objects

1. Select the **Selection** tool on the Tools panel.

2. Select the grouped objects that you want to ungroup.

3. Click the **Objects** menu, and then click **Ungroup**.

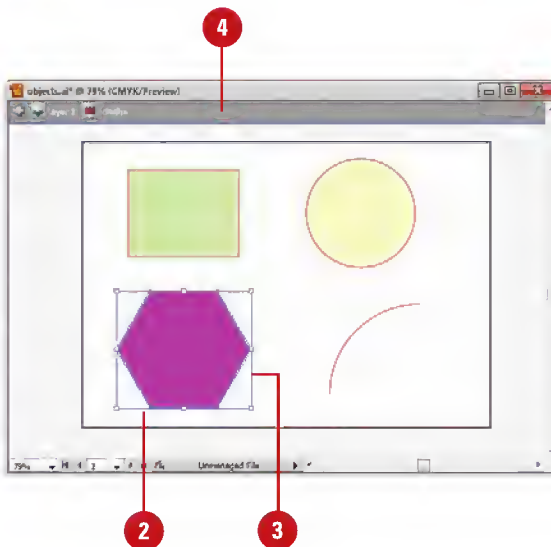   ◆ If you have nested groups within an object, you can use the Ungroup command again to ungroup it.

Use Isolation Mode to Work with Groups

1 Select the **Selection** tool on the Tools panel.

2 Double-click a grouped object.

◆ You need to click the **Isolate Selected Group** button on the Control panel or select the **Double-click to Isolate** check box in General preferences.

A gray bar appears with the name of the group at the top of the document window. All objects outside the group are dimmed out and uneditable. The words "Isolation Mode" also appear on the Layers panel.

3 Edit individual objects or add new objects to the group.

4 To exit Isolation Mode, click the gray bar.
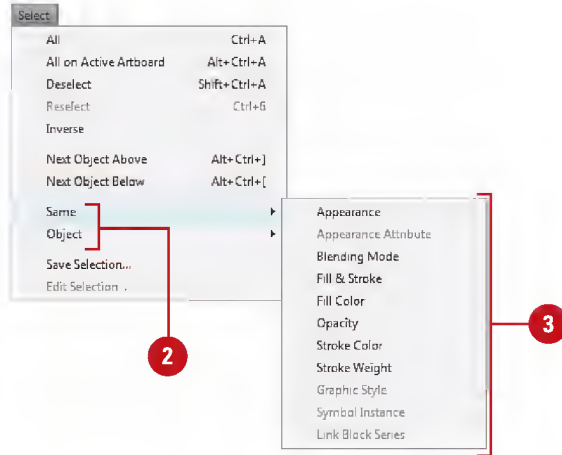
Selecting Similar Objects

The Select menu provides a variety of powerful selection commands for you to use in a document or artboard. In addition to the common commands, such as All, Deselect, and Inverse, you can also select objects whose attributes (including Appearance, Blending Modes, Fill & Stroke, Opacity, and Stroke Color) are similar to the current or last selection. For more selection power, you can select objects based on the object type (including All on Same Layers, Direction Handles, Brush Strokes, Clipping Masks, Stray Points, Text Objects).
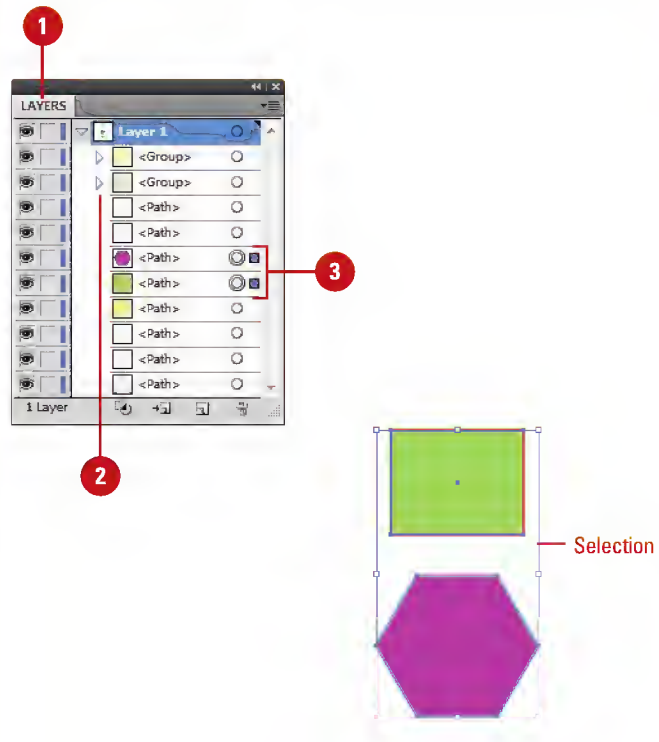
Use the Select Menu to Select Objects

1 Click the **Select** menu.

2 Select the command that you want:

◆ **All.** Selects all objects in the document.

◆ **All on Active Artboard.** Selects all objects in the active artboard.

◆ **Deselect.** Deselects all objects in the document.

◆ **Reselect.** Reselects the most recent selection.

◆ **Inverse.** Inverses the current selection.

◆ **Next Object Above.** Selects the next object above the current selection.

◆ **Next Object Below.** Selects the next object below the current selection.

Select Similar Objects or Object Attributes

1 Select an object on which to base the new selection or deselect all objects to base the new selection on the last selected object.

2 Click the **Select** menu, and then point to **Same** or **Object**.

3 Choose the command that you want to use to make a selection.

Select Objects in the Layers Panel

1 Open the Layers panel.

2 Click the expand/collapse triangle to display the layer that you want to select.

3 Click the selection area on the right side of the layer in the Layers panel that has the object that you want to select.

◆ You can also click the **Select** menu, point to **Object**, and then click **All on Same Layers** to select all on a layer.
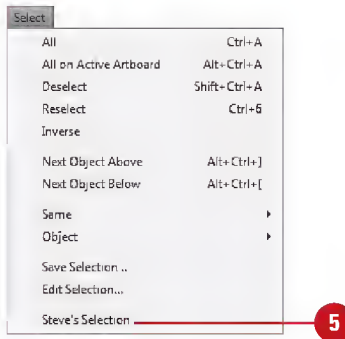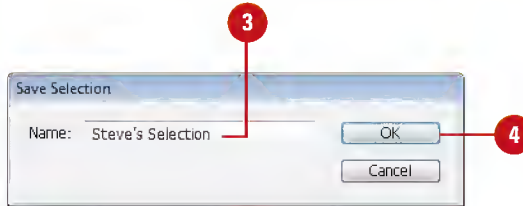
Selection

Saving and Editing Selections

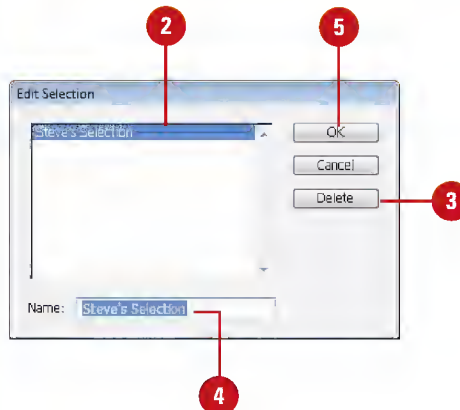If you frequently select the same elements in a document, you can save yourself some time by saving the selection with a name of your choice. After you save a selection, the saved selection name appears as a menu command at the bottom of the Select menu. When you need to make the same selection, simply choose the command. When you no longer use a saved selection, you can delete it.

Save and Use a Selection

1. Make the selection that you want to save.

2. Click the **Select** menu, and then click **Save Selection**.

3. Enter a name for the selection.

4. Click **OK**.

5. Click the **Select** menu, and then click the name of the saved selection at the bottom of the menu.

Edit a Saved Selection

1. Click the **Select** menu, and then click **Edit Selection**.

2. Select the saved selection that you want to rename or delete.

3. To delete a saved selection, click **Delete**.

4. To rename a saved selection, change the name in the Name box.

5. Click **OK**.

Moving Objects

Moving an object or group of objects is very easy. The simplest way is to drag the edge of an object in Outline or Preview view. If you want to constrain the movement of the object in multiples of 45 degrees, then use the Shift key as you drag. While you drag an object, Smart Guides appear automatically to make it easier for you to align objects with other objects.

Move an Object

1 Select the **Selection** tool on the Tools panel.

2 Select one or more objects that you want to move.

3 Drag the edge of an object.

♦ To constrain the movement of the object to multiples of 45 degrees or the current angle in General preferences, hold down the Shift key as you drag.

♦ If the path has a color fill, appears in Preview mode, and the Object Selection by Path Only check box is deselected in Selection & Anchor Display preferences, you can also click the fill to select the object.
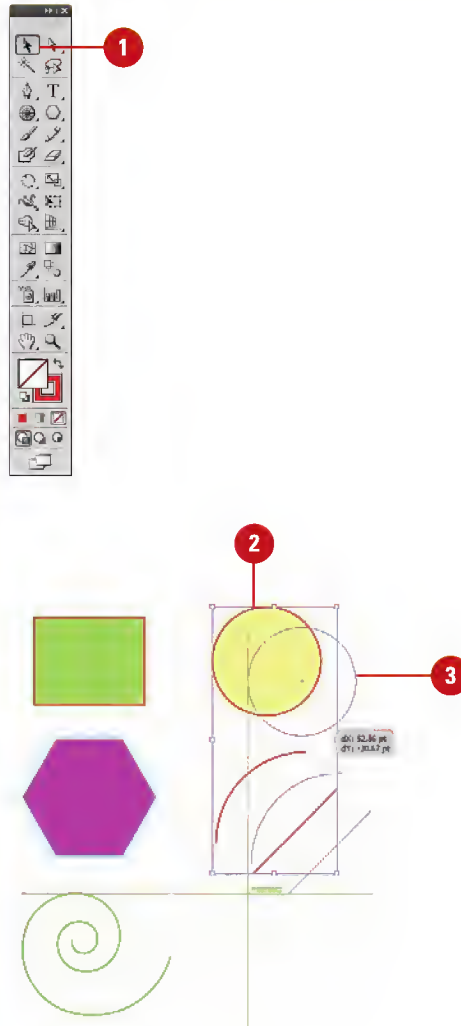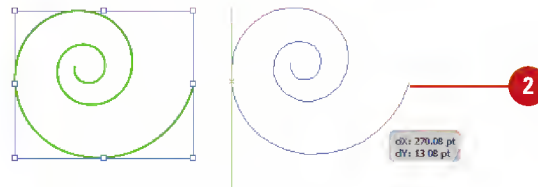
Did You Know?

You can delete an object. Select the object that you want to delete, and then press Delete, or click the Edit menu, and then click Clear.

See Also

See "Using Smart Guides" on page 50 for more information on setting Smart Guide preferences and using Smart Guides.
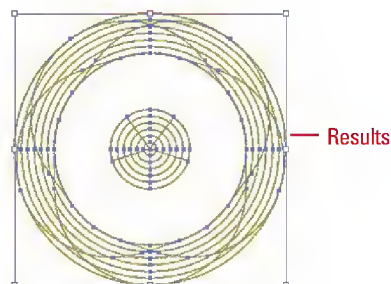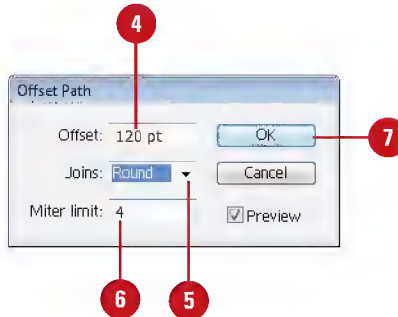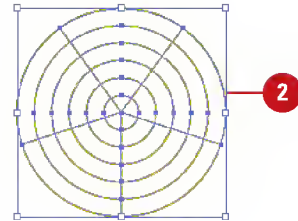
Duplicating Objects

Duplicating objects can be a powerful way of creating geometrical artwork. You can duplicate one or more selected objects by dragging them, using Arrow keys, copying to and pasting from the Clipboard, or using the Offset Path command. When you copy objects to the Clipboard, you can paste them on an artboard several different ways: Paste, Paste in Front, Paste in Back, Paste in Place (**New!**), or Paste on All Artboards (**New!**). The Offset Path command duplicates a path (along with fill and stroke attributes) and places it on the artboard based on the offset distance specified in the Offset Path dialog box. The duplicate path is reshaped to fit around the original path.

Duplicate or Copy Objects

1 Select the **Selection** tool on the Tools panel.

◆ If the object is in a group, select the **Direct Selection** tool on the Tools panel.

2 Use any of the following methods:

◆ **Same Document.** Hold down Alt (Win) or Option (Mac), and then drag the edge or fill of the object.

◆ **Different Documents.** Open the documents side by side, and then drag the edge or fill of the object from one document to another.

◆ **Copy/Paste from Clipboard.** Select the object, click the **Edit** menu, and then click **Copy**. Click in the target document or artboard, click the **Edit** menu, and then click **Paste**, **Paste in Front**, **Paste in Back**, **Paste in Place** (**New!**), or **Paste on All Artboards** (**New!**).

◆ **Keyboard.** Select the object, press Control (Win) or ⌘⌘ (Mac), and then use an Arrow key to move the duplicated object in the direction you want. The duplicate object moves away from the original object based on the current keyboard increment value in General preferences.

Duplicate Objects Using an Offset

1 Select the **Selection** tool on the Tools panel.

2 Select an object.

3 Click the **Object** menu, point to **Path**, and then click **Offset Path**.

4 Enter the distance you want to offset the duplicate path from the original object.

5 Click the **Joins** list arrow, and then select a bend style: **Miter** (pointed), **Round** (circular), or **Bevel** (square-cornered).

6 You can set a limit (1-500) to determine when a mitered corner changes into a beveled corner. A low number creates a more beveled corner, while a high number creates a sharper corner.
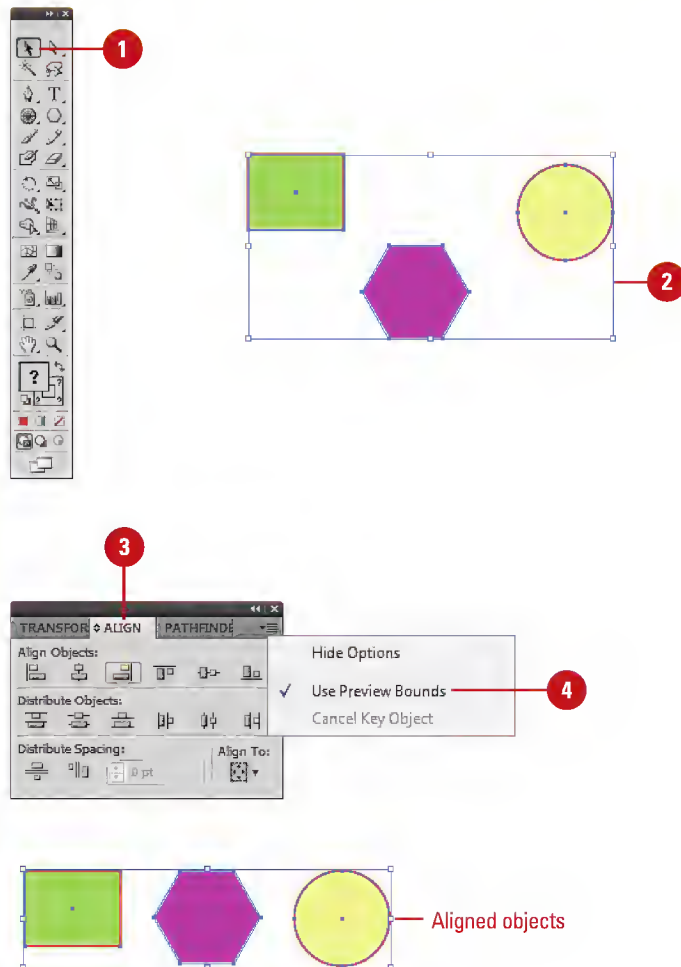
7 Click **OK**.

Aligning and Distributing Objects

In addition to using grids and guides to align objects to a specific point, you can align a group of objects to each other. The Align panel buttons make it easy to align two or more objects relative to each other or to the page. To evenly align several objects to each other across the document, either horizontally or vertically, select them and then choose a distribution option. Before you select an align command, specify how you want Illustrator to align the objects. You can align the objects in relation to the document or to the selected objects. If you want to align all the objects to another object, you can select and use a key object, before you select an alignment option.
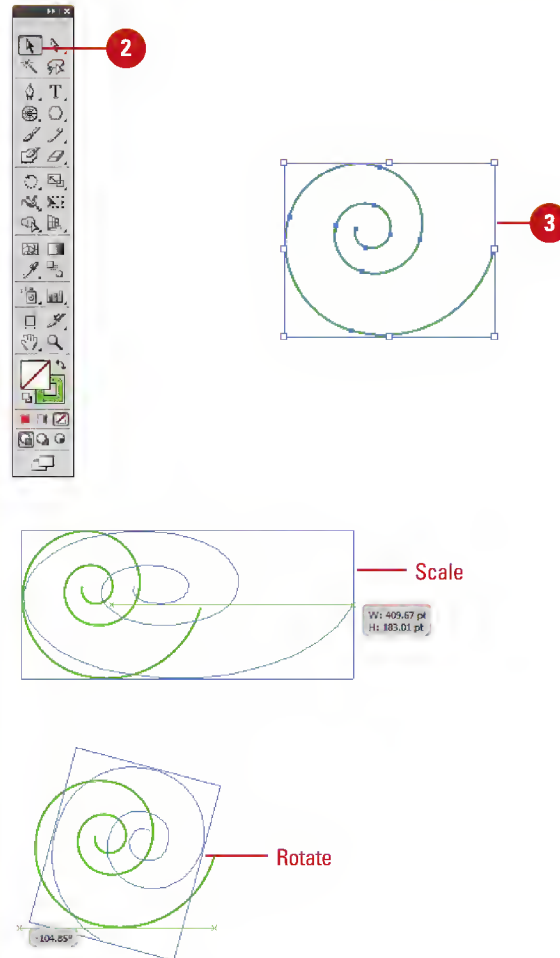
Align or Distribute Objects

1. Select the **Selection** tool on the Tools panel.

2. Select two or more objects to align them or select three or more objects to distribute them.

3. Select the **Align** panel or click **Align** on the Control panel.

4. Click the **Options** menu, and then click **Use Preview Bounds**. A checked option uses the object's stroke weight and any applied effects when aligning or distributing.

5. If you want to align objects along the edges of the artboard, click the **Align To** menu on the Align or Control panel, and then click **Align to Artboard**. Objects are moved on the artboard based on the alignment or distribution command to the closest edge (top and bottom, or left and right).

6. If you want to align objects to a key object, click an object to make it the key object (a thick blue outline appears and the **Align To Key Object** option is selected in the Align and Control panel).

7. Use the alignment and distribution buttons on the Align or Control panel.

Aligned objects

Transforming Objects

The easiest way to transform an object is to use the bounding box. With the bounding box, you can quickly scale (resize), reflect (mirror), and rotate an object. However, you cannot copy an object or move the reference point. As you drag to transform an object, you can use keyboard keys to alter the results of a transformation. Experiment with the different options to create some new results.

Transform an Object with the Bounding Box

1. Click the **View** menu, and then click **Show Bounding Box** to display it.

2. Select the **Selection** tool on the Tools panel.

3. Select one or more objects to transform.

4. Use any of the following methods:

   ◆ **Scale.** Drag a corner handle to scale along two axes; drag a side handle to scale along one axis; Shift-drag to scale proportionally; hold down Alt (Win) or Option (Mac), and then drag to scale from the center. Also hold down Shift to scale from the center proportionally.

   ◆ **Reflect.** Drag a side handle all the way across the object to the other side.

   ◆ **Rotate.** Point slightly outside a corner handle (pointer changes to a double arrow), and then drag in a circular motion.

   To rotate an object 180 degrees, drag a corner handle diagonally all the way across the object.

5. To transform an object using exact values or percentages, select the **Transform** panel.

Scale

Rotate

Using the Free Transform Tool

The Free Transform tool allows you to rotate, scale (resize), reflect (mirror image), or shear (slant) an object. In addition, you can apply perspective and distortion to an object. However, you cannot copy an object or move the reference point. As you drag to transform an object, you can use keyboard keys to alter the results of a transformation. To help you align the results the way you want, you can use Smart Guides to make it easier.
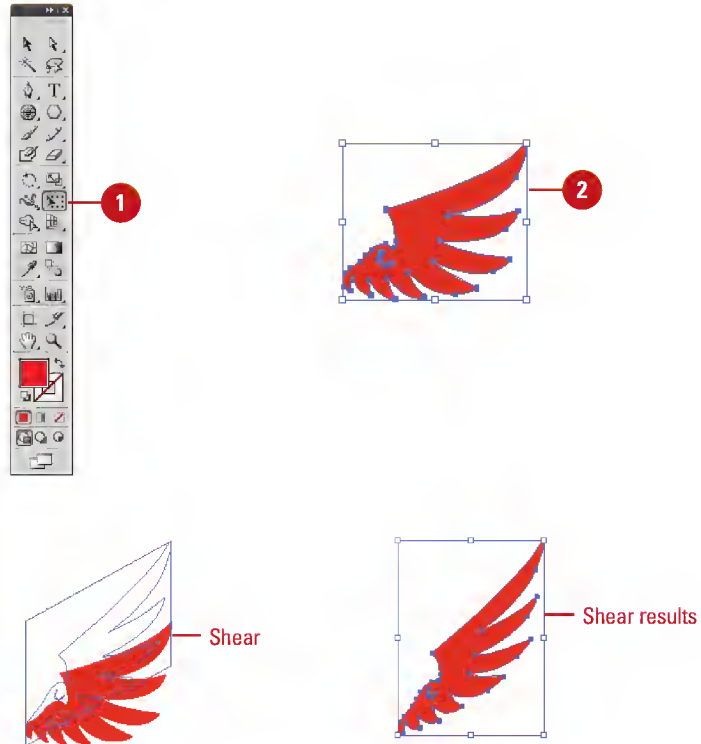
Transform an Object with the Free Transform Tool

1. Select the **Free Transform** tool on the Tools panel.

2. Select one or more objects to transform.

3. Use any of the following methods:

   ◆ **Scale.** Drag a corner handle to scale along two axes; drag a side handle to scale along one axis; Shift-drag to scale proportionally; hold down Alt (Win) or Option (Mac), and then drag to scale from the center. Also hold down Shift to scale from the center proportionally.

   ◆ **Reflect.** Drag a side handle all the way across the object to the other side.

   ◆ **Rotate.** Point slightly outside a corner handle (pointer changes to a double arrow), and then drag in a circular motion. To rotate in 45 degree increments, Shift-drag.

      To rotate an object 180 degrees, drag a corner handle diagonally all the way across the object.

   ◆ **Shear.** Drag a side handle and then hold down Ctrl (Win) or ⌘ (Mac) as you continue to drag. To constrain the movement, also press Shift. To shear from the center, also press Alt (Win) or Option (Mac).
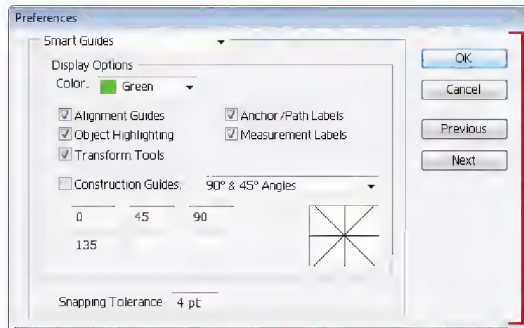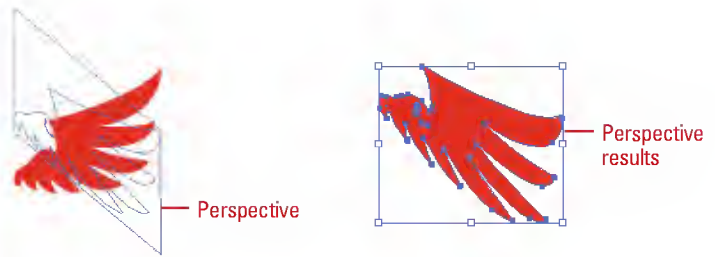

Shear

Shear results

- ◆ **Perspective.** Drag a side handle and then hold down Ctrl+Alt+Shift (Win) or ⌘+Option+Shift (Mac) as you continue to drag.

- ◆ **Distort.** Drag a corner handle and then hold down Ctrl (Win) or ⌘ (Mac) as you continue to drag.

4 To use Smart Guides as you transform an object:

- ◆ Select the **Transform Tools** check box in Smart Guides preferences.

- ◆ Click the **View** menu, and then click **Smart Guides** to display them.

- ◆ As you drag to transform an object, smart guides appear in your document, which you can use to align the transformed object.

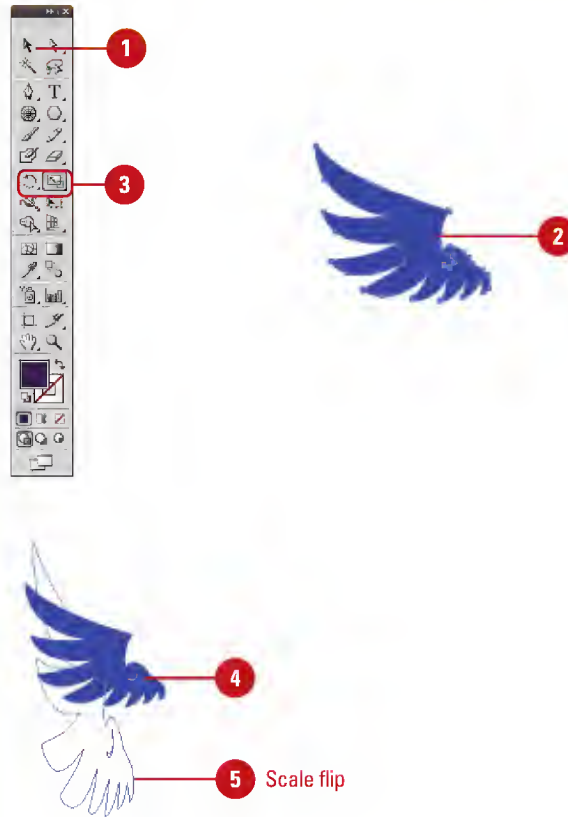**5** To transform an object using exact values or percentages, select the **Transform** panel.

Perspective

Perspective results

4

Rotating and Scaling Objects

After you create an object, you can change its orientation by rotating it or change its size by scaling it. For a freeform rotation, when you want to rotate the object in other than 90 or 180 degree increments, you can use the Rotate tool. To resize an object, either smaller or larger, you can use the Scale tool. With either tool, you can transform the object from its center or the reference point. To rotate or scale an object using exact values or percentages, use the Transform panel, which is available on the Control panel or Window menu.
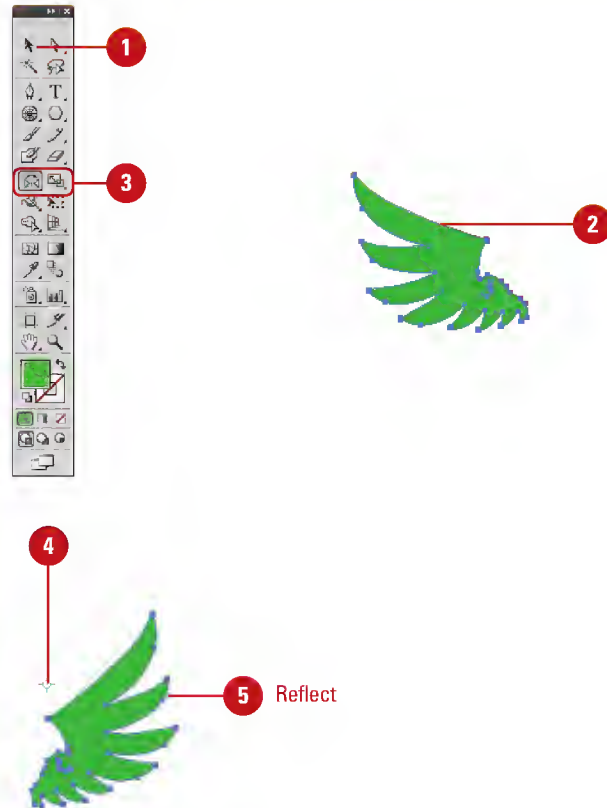
Rotate or Scale an Object

1 Select the **Selection** tool on the Tools panel.

2 Select one or more objects to transform.

3 Select the **Rotate** or **Scale** tool on the Tools panel.

4 To move the reference point, click a new point.

5 Use the appropriate method:

 ◆ **Rotate.** Drag in a circular motion. To rotate in 45 degree increments, Shift-drag.

 ◆ **Scale.** Drag away from or toward the object. Shift-drag to scale proportionally; hold down Alt (Win) or Option (Mac), and then drag to scale from the center. Also hold down Shift to scale from the center proportionally.

 ◆ **Scale and Flip.** Drag across the entire object.

 ◆ **Scale and Copy.** Hold down Alt+Shift (Win) or Option+Shift (Mac), and then drag.

5 To rotate or scale an object using exact values or percentages, select the **Transform** panel.

Scale flip

Reflecting and Shearing Objects

The Reflect and Shear tools on the Tools panel allow you to be creative as you transform an object. The Reflect tool creates a mirror image of an object, while the Shear tool creates a slanted image of an object. To reflect or shear an object using exact values or percentages, open the Transform panel, which is available on the Control panel or Window menu.
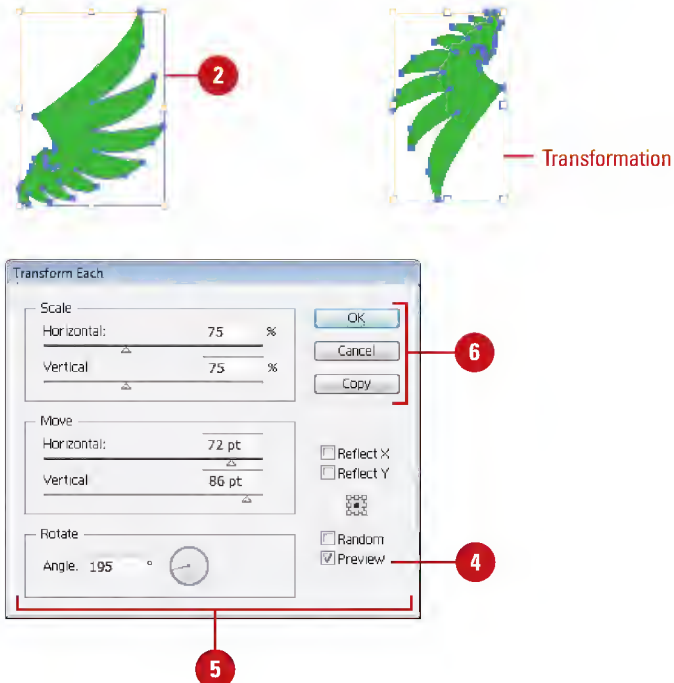
Reflect or Shear an Object

1. Select the **Selection** tool on the Tools panel.

2. Select one or more objects to transform.

3. Select the **Reflect** or **Shear** tool on the Tools panel.

4. To move the reference point, click a new point.

5. Use the appropriate method:

   ◆ **Reflect.** Click to establish a reference point, and then click again to establish the axis of reflection.

   ◆ **Shear.** Drag away from the object.

6. To reflect or shear an object using exact values or percentages, select the **Transform** panel.

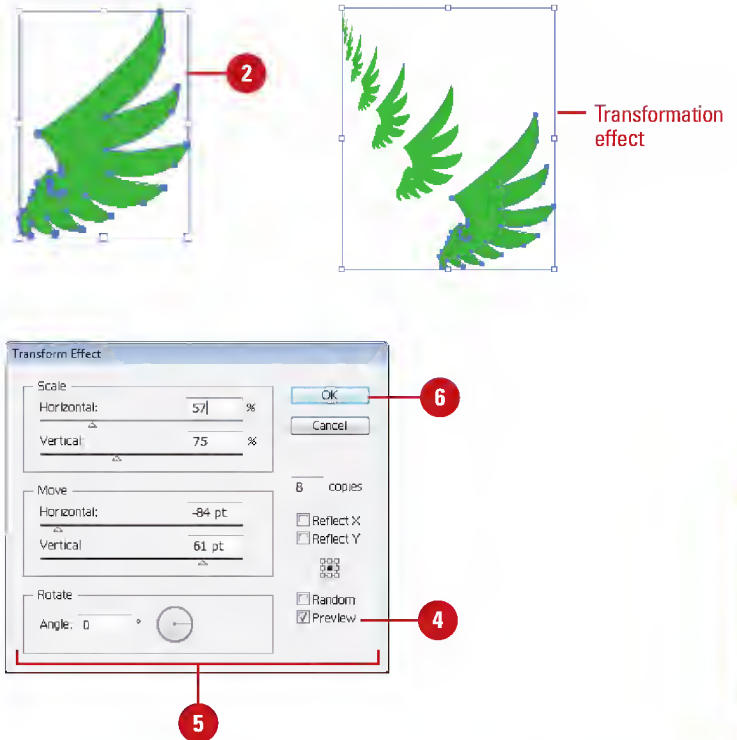Reflect

Applying Multiple Transformations

The Transform Each command allows you to transform multiple objects relative to their individual reference points instead of a single reference point. With the Transform Each command, you can scale or move objects horizontally or vertically, rotate objects by a specific angle, and create a mirror reflection of the objects. If you want to create a unique effect, you can also have Illustrator apply random transformations. You can also use the Transform Effect command to create similar effects, which you can modify.

Use the Transform Each Command

1. Select the **Selection** tool on the Tools panel.

2. Select one or more objects to transform.

3. Click the **Object** menu, point to **Transform**, and then click **Transform Each**.

4. Select the **Preview** check box to view your changes on the selected object.

5. Do any of the following:

   ◆ **Scale Horizontal or Vertical.** Drag the slider or enter a percentage to scale objects from their reference point.

   ◆ **Move Horizontal or Vertical.** Drag the slider or enter a percentage to move objects left or right and up or down.

   ◆ **Rotate Angle.** Enter a rotate angle or drag the dial.

   ◆ **Reflect X or Y.** Select to create a mirror reflection of the objects.

   ◆ **Reference Point.** Click a square to change the reference point.

   ◆ **Random.** Select to apply random transformations using the values in the dialog box.

5. Click **OK** or **Copy** (creates a copy and applies the transformation).

Transformation

Use the Transform Effect

7 Select the **Selection** tool on the Tools panel.

7 Select one or more objects to transform.

3 Click the **Effect** menu, point to **Distort & Transform**, and then click **Transform**.

4 Select the **Preview** check box to view your changes on the selected object.

5 Do any of the following:

◆ **Scale Horizontal or Vertical.** Drag the slider or enter a percentage to scale objects from their reference point.

◆ **Move Horizontal or Vertical.** Drag the slider or enter a percentage to move objects left or right and up or down.

◆ **Rotate Angle.** Enter a rotate angle or drag the dial.

◆ **Copies.** Enter the number of copies you want.

◆ **Reflect X or Y.** Select to create a mirror reflection of the objects.

◆ **Reference Point.** Click a square to change the reference point.

◆ **Random.** Select to apply random transformations using the values in the dialog box.

5 Click **OK**.

7 To edit the transformation, select the object, and then click **Transform** on the Appearance panel.

Transformation effect

For Your Information

Repeating a Transformation

The Transform Again command allows you to quickly repeat the last transformation with the last-used values on a selected object. To use the command, transform and select an object or group, click the Object menu, point to Transform, and then click Transform Again or press Ctrl+D (Win) or ⌘+D (Mac).
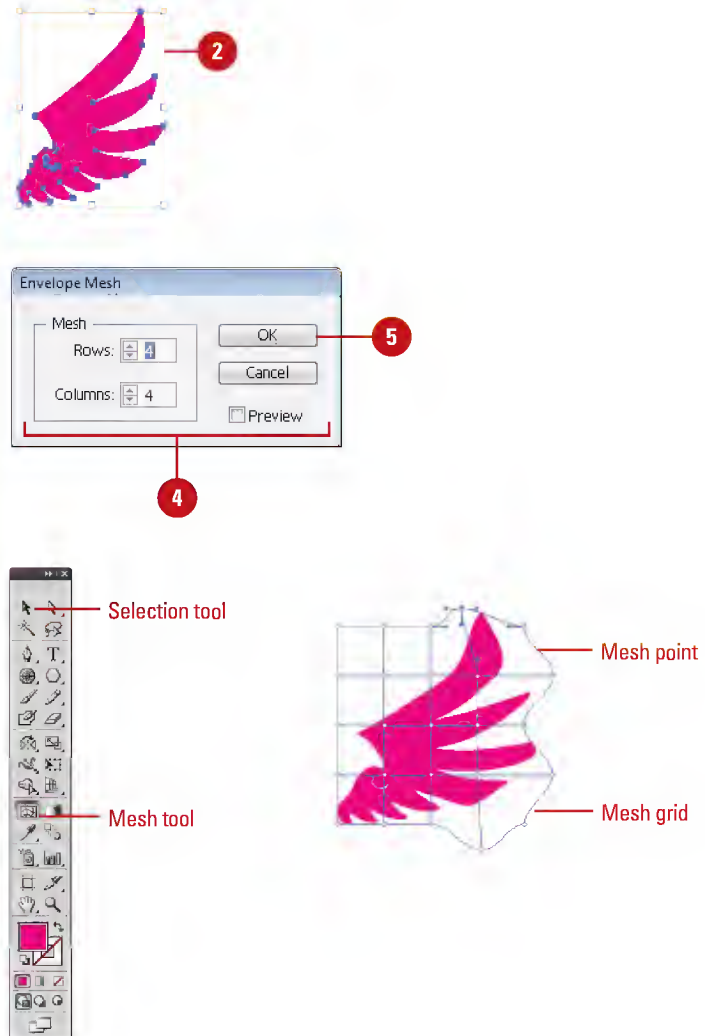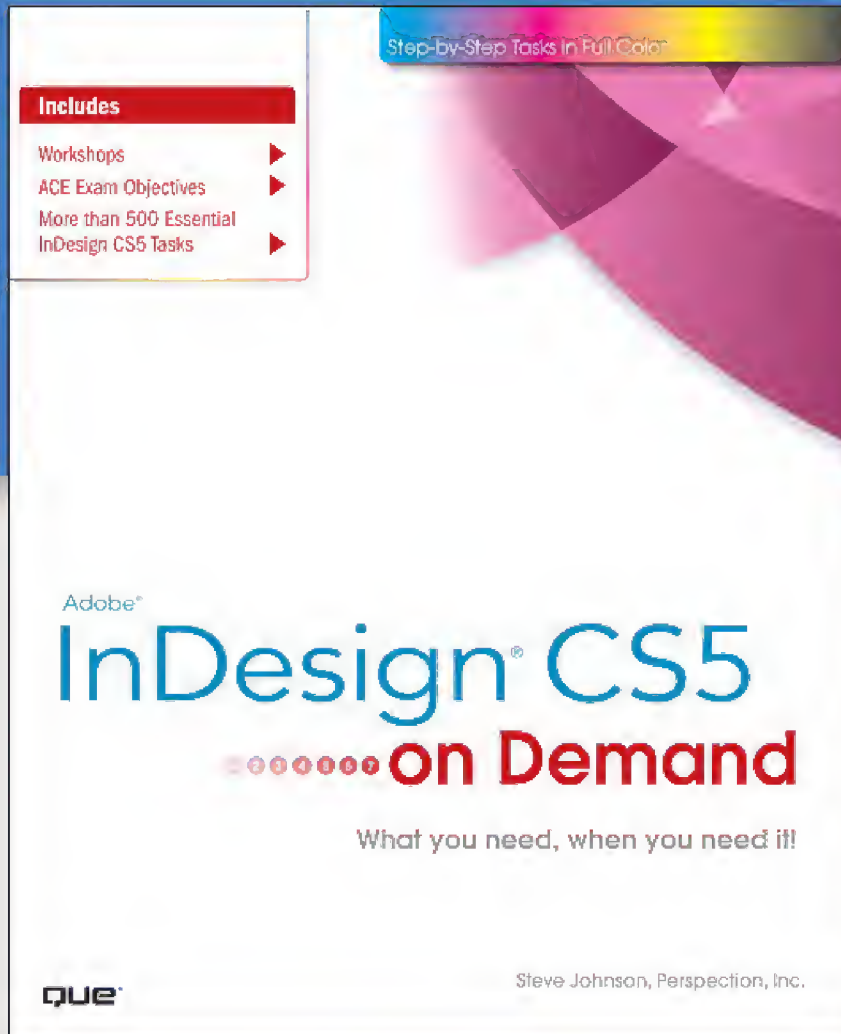
Reshaping Objects with Envelopes

Envelopes are objects you can use to reshape other objects, except graphs, guides, or linked objects. You can use one of the built-in envelopes or create your own out of an existing object. The built-in envelopes use warp shapes or a mesh grid as the object. After you apply an envelope, you can edit the original object or the envelope (anchor points), separately, using the Selection and Mesh tools on the Tools panel.

Distort Objects with an Envelope

1. Select the **Selection** tool on the Tools panel.

2. Select one or more objects to reshape.

3. Click the **Object** menu, point to **Envelope Distort**, and then click one of the following:

   ◆ **Make With Warp.** Uses a preset warp shape.

   ◆ **Make with Mesh.** Uses a rectangle grid.

   ◆ **Make With Top Object.** Uses an object as the shape of the envelope. The object needs to be at the top of the stacking order.

4. Specify the options you want for the envelope type; select the **Preview** check box to view your changes on the selected object.

5. Click **OK**.

5. Do any of the following:

   ◆ **Reshape.** Select the **Selection** or **Mesh** tool, and then drag any anchor points.

   ◆ **Delete Anchor Points.** For a mesh grid, select the **Selection** or **Mesh** tool, select an anchor point, and then press Delete.

   ◆ **Add Anchor Points.** For mesh grid, select the **Mesh** tool, and then click on the grid.

Selection tool

Mesh tool

Mesh point

Mesh grid

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Creating an Interactive Document

<div style="text-align:right">**13**</div>

Introduction

In the past, desktop publishing was exclusively considered a print-based medium. However, with the introduction and popularity of the PDF (Portable Document Format) file format and the Adobe Reader as well as the SWF (ShockWave Flash) file format and the Adobe Flash Player, interactive documents are more popular than ever. Instead of creating a document just for printing, you can now create an interactive document with hyperlinks, bookmarks, and buttons for presentations. You can even add animation using motion presets, page transitions, such as a wipe or dissolve, when you turn a page and insert sounds and videos into an InDesign document in addition to graphics.

With the Hyperlinks panel, you can create hyperlinks that navigate to external URLs, link to files with supplemental information, launch an e-mail client, or jump to a page or section of a page within the same or even a different document. You can also verify your hyperlinks directly in InDesign with no need to export the document to a PDF or Flash (SWF) file for testing.

The Buttons panel is a centralized place to work with interactive buttons in InDesign. The Buttons panel makes it easy to create interactive buttons that perform actions when the document is exported to Flash (SWF file) or Acrobat (PDF). You can create a custom button from a selected object in an InDesign document or select a button from the built-in Samples button library. When you create an interactive button, you can add events and actions to enable navigation within a document, launch a movie, play a sound, or open a Web page.

When you're finished with your interactive document, you can use the Preview panel to view animation and interactivity for the current selection, current spread, or the entire document.

What You'll Do

Define Hyperlink Destinations

Create Hyperlinks

Convert and Stylize Hyperlinks

Use the Hyperlinks Panel

Create Cross-References

Create Bookmarks

Add Media

Set Media Options

Add Animation with Motion Presets

Work with Animations

Change Animation Order

Add Page Transitions

Use the Buttons Panel

Create Buttons

Work with Events and Actions

Work with Button States

Set Button Tab Order

Create Multi-State Objects
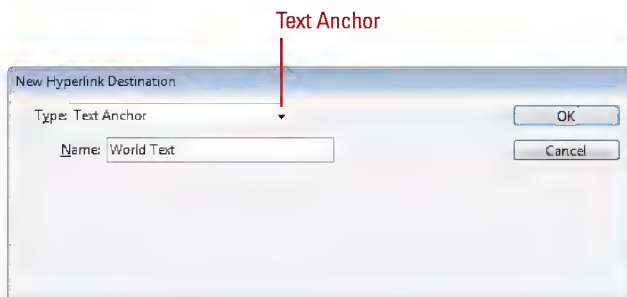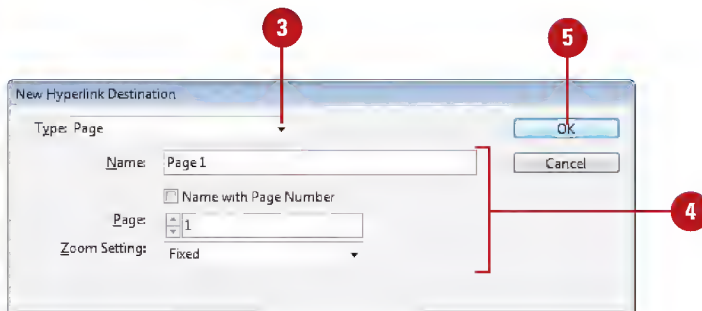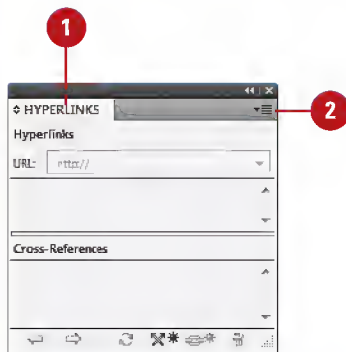
Use the Preview Panel

Defining Hyperlink Destinations

A **hyperlink** is a text or graphic object that is linked to other parts of the document, other documents, or Web pages. A hyperlink consists of a source and a destination. The **source** is the text or graphic object that you click to jump to the hyperlink location while the **destination** is the place that InDesign sends you to. The destination can be in the same document, another document, an e-mail message, or a Web page on the Internet. You need to define a destination before you can define the source.
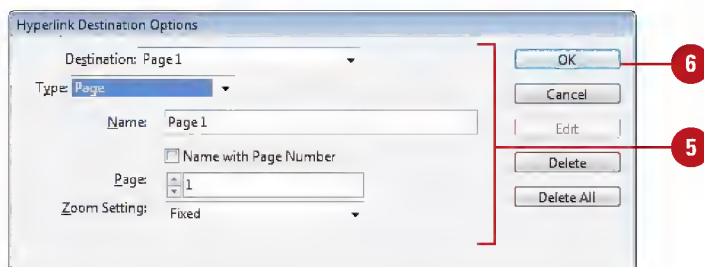
Create a Hyperlink Destination

1 Select the **Hyperlinks** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2 Click the **Options** menu, and then click **New Hyperlink Destination**.

3 Click the **Type** list arrow, and then select a hyperlink type:

◆ **Page.** Creates a link to a page in the same document.

◆ **Text Anchor.** Creates a link to a selected area of text.

◆ **URL.** Creates a link to a Web page on the Internet.

4 Specify the options related to the hyperlink type; options vary depending on the type.

◆ **For a Page.** Specify a page name, page number, and zoom setting.

◆ **For a Text Anchor.** Specify a name for the anchor.

◆ **For an URL.** Specify a name and address for the URL (Uniform Resource Locator).

5 Click **OK**.

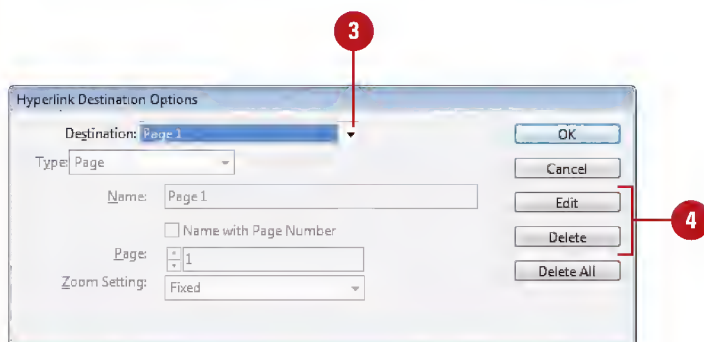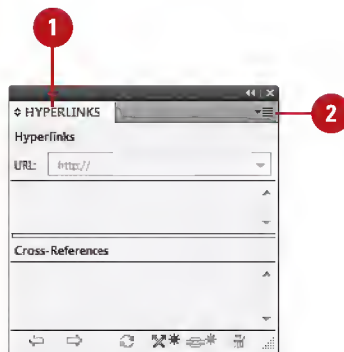

Text Anchor

Edit or Delete a Hyperlink Destination

1. Select the **Hyperlinks** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2. Click the **Options** menu, and then click **Hyperlink Destination Options**.

3. Click the **Destination** list arrow, and then select a destination.

4. Click **Edit** or **Delete**.

5. If editing, make the changes you want for the destination.
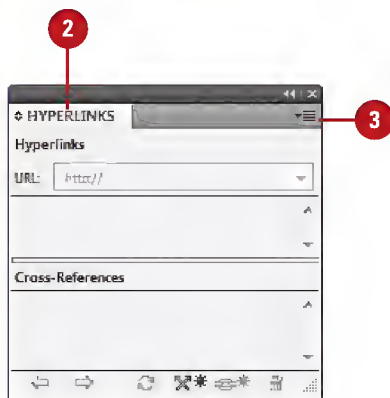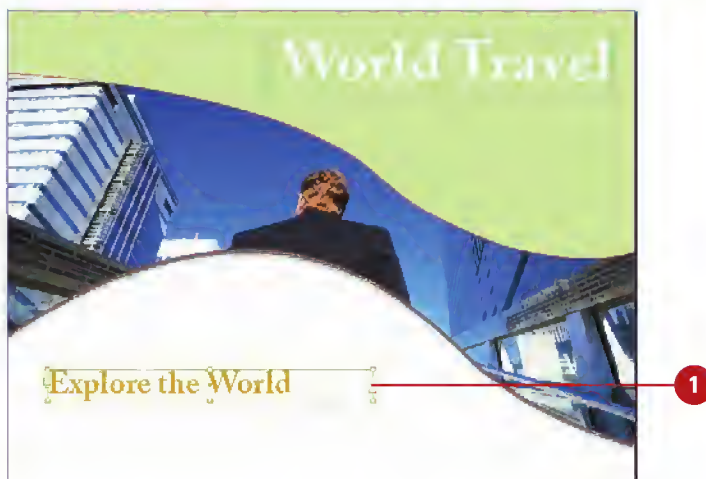
5. Click **OK**.

Creating Hyperlinks

Before you can create a hyperlink, you need to define a hyperlink destination. After you create one or more hyperlink destinations, you can create a hyperlink source, which is a text or graphic object that you click to jump to a hyperlink destination. You can link a hyperlink to several different destination types, including URL, File, Email, Page, Text Anchor, and Shared Destination. If you need a quick hyperlink to an URL, you can create one with the New Hyperlink From URL command.

Create a Hyperlink

1 Select the text or graphic you want to use as the hyperlink.

2 Select the **Hyperlinks** panel.

 ◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

3 Click the **Options** menu, and then click **New Hyperlink**.

4 Click the **Link To** list arrow, and then select an option:

 ◆ **URL**. Creates a link to a web page on the Internet.

 ◆ **File**. Creates a link to a document.

 ◆ **Email**. Creates an e-mail message link, which opens your default e-mail program.

 ◆ **Page**. Creates a link to a page in the same document.

 ◆ **Text Anchor**. Creates a link to a selected area of text.

 ◆ **Shared Destination**. Creates a link to the same destination from multiple sources.

5 Specify the options related to the hyperlink type; options vary depending on the type.

 ◆ **For an URL**. Specify a name and address for the URL (Uniform Resource Locator).

 ◆ **For a File**. Use the Browse button to select a file to link.

- ◆ **For an Email.** Specify an e-mail address and message subject line.

- ◆ **For a Page.** Specify a page name, page number, and zoom setting.

- ◆ **For a Text Anchor.** Specify a name for the anchor.

- ◆ **For a Shared Destination.** Specify a document name, and hyperlink destination.

6 Specify a character style for the text and appearance options for the hyperlink.
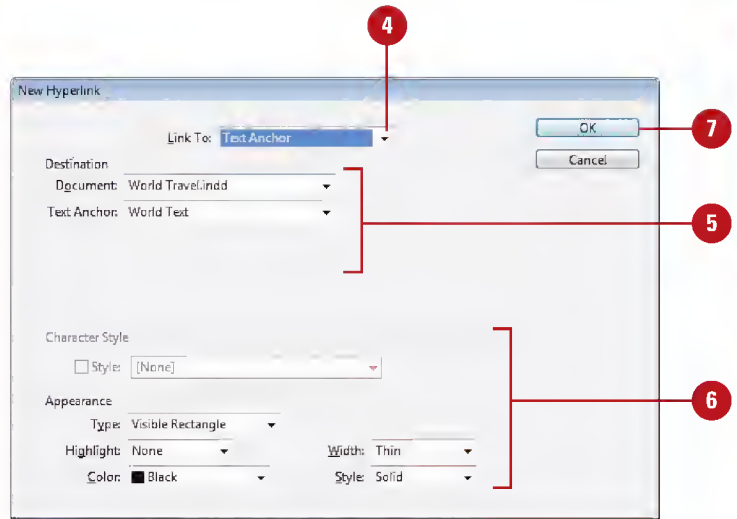
7 Click **OK**.

Create a Hyperlink From an URL

1 Select the text that you want to use to create a URL.

2 Select the **Hyperlinks** panel.

- ◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

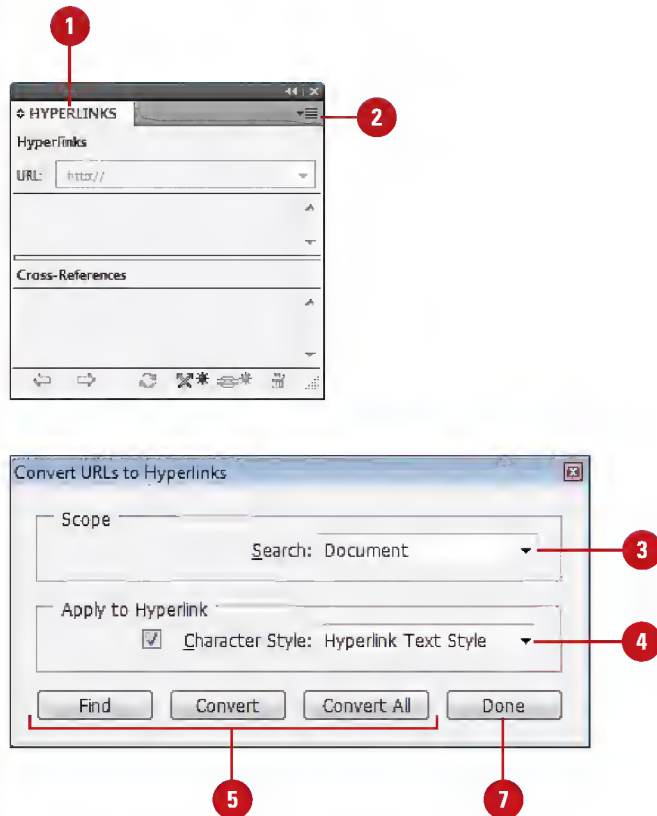**3** Click the **Options** menu, and then click **New Hyperlink From URL**.

Hyperlink from URL

Converting and Stylizing Hyperlinks

If you have one or more URLs in your document, you can use the Convert URLs to Hyperlink command (**New!**) to search the current selection, story, or document for URL strings and convert them to hyperlinks. The Convert URLs to Hyperlinks dialog box works like the Find/Change dialog box. You can find URLs and convert one URL at a time or convert them all at once. In addition to converting URLs to hyperlinks, you can also apply a character style to create a consistent look. However, if you don't want them all the same, you can change the style and appearance of individual hyperlinks.

Convert and Stylize URLs to Hyperlinks

1 Select the **Hyperlinks** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2 Click the **Options** menu, and then click **Convert URLs to Hyperlinks**.

3 Click the **Search** list arrow, and then select the scope option you want: **Document**, **Story**, or **Selection**.

4 To apply a character style to the converted hyperlinks, select the **Apply to Hyperlink** check box, click the **Character Style** list arrow, and then select a character style.

5 Use the following buttons to find or convert the URL strings:

◆ **Find.** Starts the search for the next URL string.

◆ **Convert.** Converts the selected URL string to a hyperlink.

◆ **Convert All.** Changes all find URL strings to hyperlinks.

6 If the Finished Finding URLs alert dialog box appears, click **OK**.

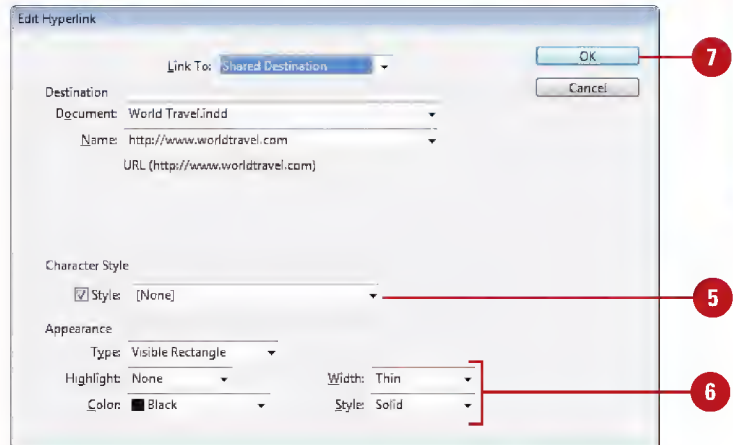**7** When you're finished, click **Done**.

Change the Appearance of a Hyperlink

1 Select the **Hyperlinks** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2 Select the hyperlink you want to edit.

3 Click the **Options** menu, and then click **Hyperlink Options**.

◆ You can also double-click a hyperlink in the Hyperlinks panel.

4 Double-click the hyperlink in the Hyperlinks panel.

5 For text, select the **Style** check box, and then select a character style.

6 Make the changes you want for the hyperlink appearance.

◆ **Type.** Specify a visibility setting for the hyperlink.

◆ **Highlight.** Specify a highlight setting for the hotspot.

◆ **Color.** Specify a color for the hyperlink.

◆ **Width.** Specify a thickness for the visible rectangle type.

◆ **Style.** Specify a line style for the visible rectangle type.
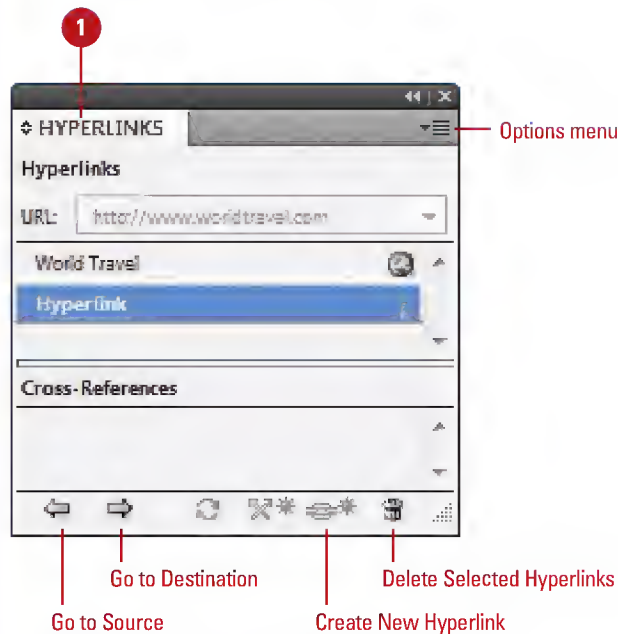
7 Click **OK**.

Using the Hyperlinks Panel

The Hyperlinks panel is a centralized place to work with hyperlinks and cross references in InDesign. The redesigned Hyperlinks panel makes it easy to create hyperlinks that navigate to external URLs, link to files with supplemental information, launch an e-mail client, or jump to a page or section of a page within the same or even a different document. You can also verify your hyperlinks directly in InDesign with no need to export the document to a PDF or Flash (SWF file) for testing. You can use buttons on the bottom of the panel to go to the hyperlink source or destination, create a new hyperlink, or delete hyperlinks.

Use the Hyperlinks Panel

1. Select the **Hyperlinks** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2. Use any of the following buttons or commands to perform an operation:

   ◆ **Go to the Hyperlink Source.** Select the hyperlink, and then click the **Go to Source** button.

   ◆ **Go to the Hyperlink Destination.** Select the hyperlink, and then click the **Go to Destination** button.

   ◆ **Create a New Hyperlink.** Create a destination, and then click the **Create New Hyperlink** button.

   ◆ **Delete a Hyperlink.** Select the hyperlink, click the **Delete Selected Hyperlinks** button, and then click **Yes**.

   ◆ **Reset a Hyperlink.** Select the hyperlink, click the **Options** menu, and then click **Reset Hyperlink**.

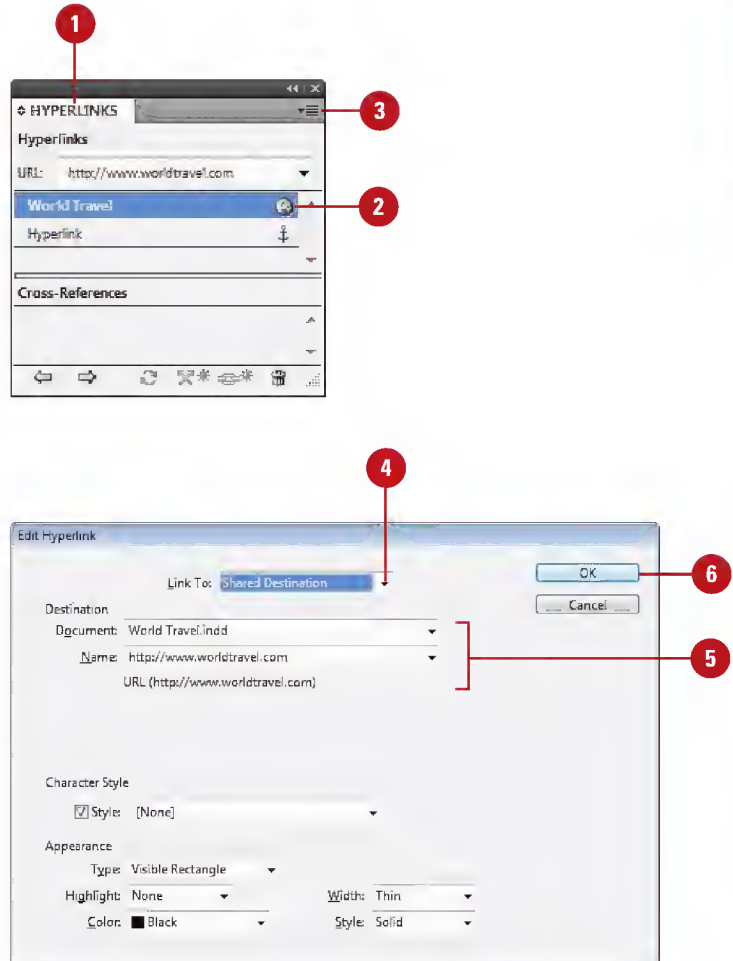   ◆ **Update a Hyperlink.** Select the hyperlink, click the **Options** menu, and then click **Update Hyperlink**.

Options menu

Go to Destination

Delete Selected Hyperlinks

Go to Source

Create New Hyperlink

Edit a Hyperlink

1 Select the **Hyperlinks** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2 Select the hyperlink you want to edit.

3 Click the **Options** menu, and then click **Hyperlink Options**.

◆ You can also double-click a hyperlink in the Hyperlinks panel.

4 Click the **Link To** list arrow, and then select an option:

◆ **URL**. Creates a link to a web page on the Internet.

◆ **File**. Creates a link to a document.

◆ **Email**. Creates an e-mail message link, which opens your default e-mail program.

◆ **Page**. Creates a link to a page in the same document.

◆ **Text Anchor**. Creates a link to a selected area of text.

◆ **Shared Destination**. Creates a link to the same destination from multiple sources.

5 Specify the options related to the hyperlink type; options vary depending on the Link To type.

6 Click **OK**.

See Also

See "Creating Hyperlinks" on page 348-349 for more information on setting options for editing a hyperlink.
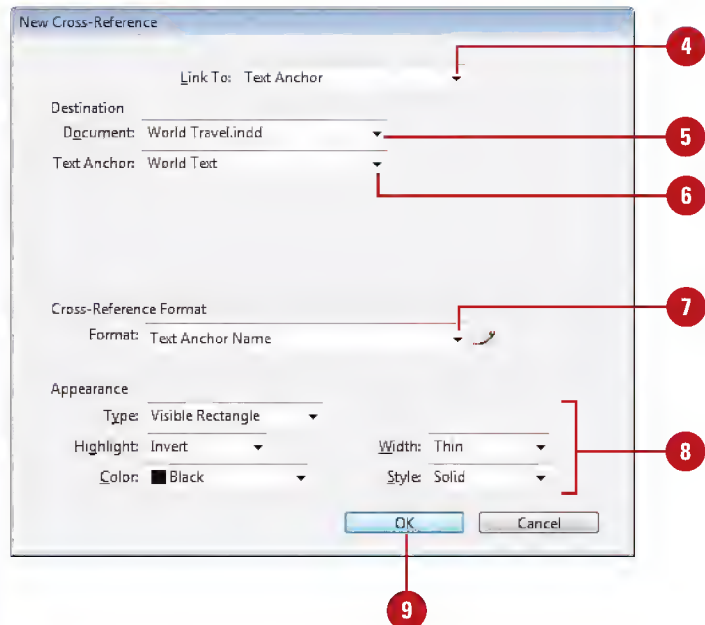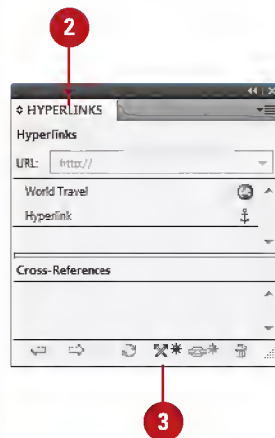
Creating Cross-References

A cross-reference refers a reader from one section of a document to another. For example, *For more information, see "Using the Hyperlinks Panel" on page 352*. The text being referred to is the destination text, while the text generated from the destination is the source cross-reference, which is editable. The Hyperlinks panel is a centralized place to create and work with hyperlinks and cross references in InDesign. You can use buttons on the bottom of the panel to go to the cross-reference source or destination, create a new cross-reference, or delete cross-references. When you create or edit a cross-reference, you can select format and appearance settings for the reference.

Create a Cross-Reference

1 Click to place the insertion point where you want the cross-reference.

2 Select the **Hyperlinks** panel.

- ◆ Click the **Window** menu, point to **Type & Tables**, and then click **Cross-References**.

3 Click the **New Cross-Reference** button on the panel.

4 Click the **Link To** list arrow, and then select a link type.

5 Click the **Document** list arrow, and then select a document location.

5 Select a paragraph in the document or a hyperlink destination for the text anchor.

2 Click the **Format** list arrow, and then select a cross-reference format.

8 Make the changes you want for the cross-reference appearance.

- ◆ **Type.** Specify a visibility setting.

- ◆ **Highlight.** Specify a highlight setting for the hotspot.

- ◆ **Color.** Specify a color.

- ◆ **Width.** Specify a thickness for the visible rectangle type.

- ◆ **Style.** Specify a line style for the visible rectangle type.
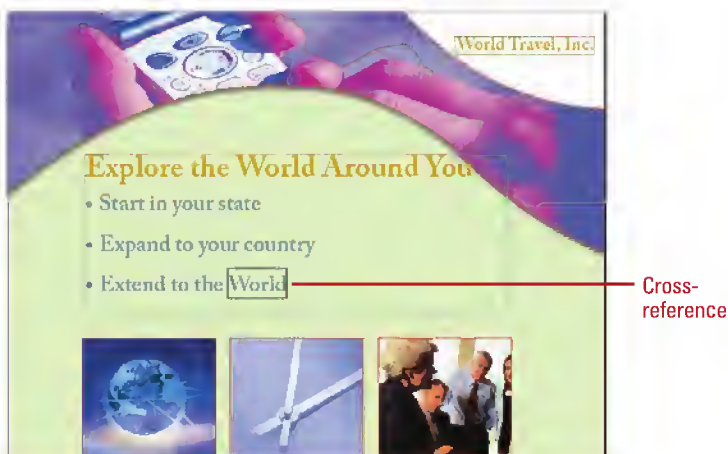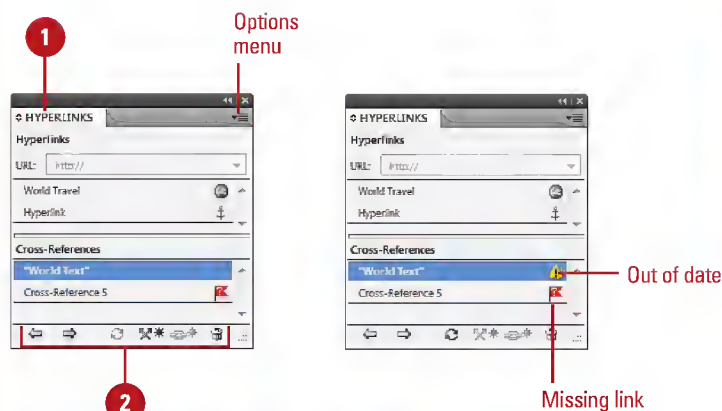
5 Click **OK**.

Work with Cross-References

1. Select the **Hyperlinks** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Hyperlinks**.

2. Use any of the following buttons or commands to perform an operation:

   ◆ **Go to the Cross-Reference Source.** Select the reference, and then click the **Go to Source** button.

   ◆ **Go to the Cross-Reference Destination.** Select the reference, and then click the **Go to Destination** button.

   ◆ **Create a New Cross-Reference.** Select the cross-reference text, and then click the **Create New Cross-Reference** button.

   ◆ **Edit a Cross-Reference.** Double-click the cross-reference in the panel.

   ◆ **Delete a New Cross-Reference.** Select the reference, click the **Delete Selected Cross-Reference** button, and then click **Yes**.

   ◆ **Reset a New Cross-Reference.** Select the reference, click the **Options** menu, and then click **Reset Cross-Reference**.

   ◆ **Update a Cross-Reference.** Select the reference, click the **Options** menu, and then click **Update Cross-Reference**.

   ◆ **Relink a Cross-Reference.** Select the reference, click the **Options** menu, click **Relink Cross-Reference**, select the reference, and then click **OK**.

Options menu

Out of date

Missing link

Cross-reference

For Your Information

Creating or Editing Cross-Reference Formats

When you create or edit a cross-reference, you can also select a format, such as Page Number Only or Full Paragraph & Page Number. You can create new formats or edit the existing formats to customize your own. In the Cross-Reference dialog box, click the Create or Edit Cross-Reference Formats button, enter a name, click the different reference formats and add your own text to create your own definition. When you're done, click OK. You can also click the Options menu, and then click Define Cross-Reference Formats to make changes.
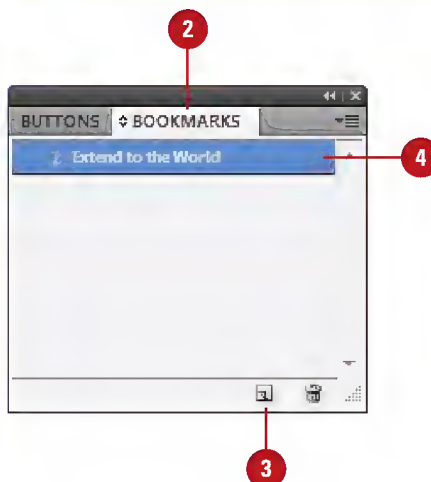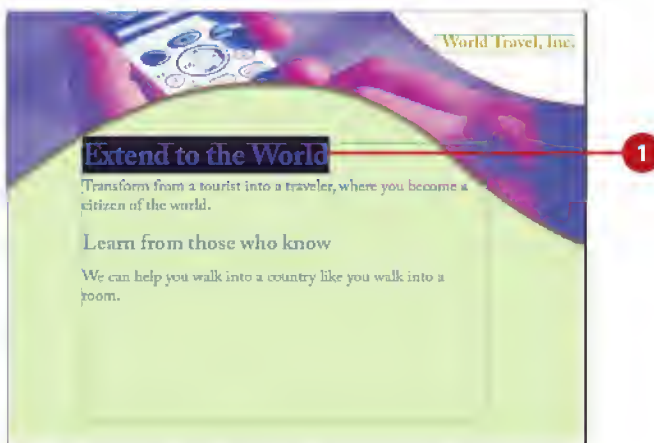
Creating Bookmarks

Bookmarks provide another way to navigate through a document. You can create bookmarks that will point to a place in a text frame, any selected text, a frame, or a page. You can create and work with bookmarks in the Bookmarks panel. When you create a PDF of your document, readers can use the bookmarks to navigate from one location to another by using the Bookmarks panel.

Create and Rename a Bookmark

1. Do one of the following to select a bookmark location:

   ◆ **Insertion Point.** Click to place the insertion point where you want the bookmark.

   ◆ **Text.** Select any text to specify a location.

   ◆ **Frame.** Select a text or graphic frame to specify a location.

   ◆ **Page.** Double-click a page in the Pages panel to specify a page location.

2. Select the **Bookmarks** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Bookmarks**.

3. Click the **New Bookmark** button on the panel.

4. Click the bookmark to select it.

5. Click the bookmark again to make the name editable.

   ◆ You can also click the **Options** menu, click **Rename Bookmark**, enter a name, and then click **OK**.

6. Type a name for the bookmark, and then press Enter (Win) or Return (Mac).

Use the Bookmarks Panel

1 Select the **Bookmarks** panel.

◆ Click the **Window** menu, point to **Interactive,** and then click **Bookmarks**.

2 Use any of the following buttons or commands to perform an operation:

◆ **Create a New Bookmark.** Select a location, and then click the **Create New Bookmark** button.

◆ **Delete a Bookmark.** Select the bookmark, click the **Delete Selected Bookmarks** button, and then click **OK**.

◆ **Rename a Bookmark.** Select the bookmark, click the **Options** menu, click **Rename Bookmark**, type a name, and then click **OK**.

◆ **Go to a Selected Bookmark.** Select the bookmark, click the **Options** menu, and then click **Go to Selected Bookmark**.

◆ **Sort Bookmarks.** Click the **Options** menu, and then click **Sort Bookmarks**.

BOOKMARKS

Extend to the World

New Bookmark
Delete Bookmark...
Rename Bookmark
Go to Selected Bookmark
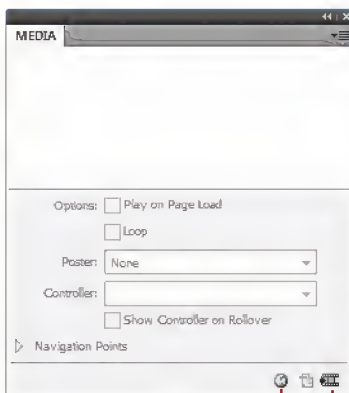Sort Bookmarks

Options menu

Adding Media

With the Place command or Media panel, you can import the sound or video clips that you want to play in your interactive document. You can import video files in Flash Video format (FLV and F4Vm), H.264-encoded files (such as MP4), and SWF (ShockWave Flash) files (**New!**). You can import audio files in MP3 format. Legacy media files, such as QuickTime (MOV), AVI, WMV, and MPEG, are still supported. However, if you want to take advantage of the rich media support in Acrobat 9, Adobe Reader 9, and Adobe Flash Player 10 or later, you need to convert and relink your legacy media to FLV, F4V, SWF, MP4, or MP3 using Adobe Media Encoder. After you import sound and video files, you can preview them in the Preview panel (**New!**) in InDesign or export them to Adobe PDF or SWF, or XML. You can export legacy media files to PDF files, but not to SWF or FLA files. If you have video on a Web server, you can place the video from a URL (**New!**). If you're not sure what to play, you can create an empty frame (with diagonal lines) and then import the clip later. When you import a media file, a poster image appears, which you can change or remove later.

Insert a Media File

1. Click the **File** menu, and then click **Place**, or select the **Media** panel, and then click the **Place Video or Audio File** button on the panel (**New!**).

    ◆ **Place a Video from a URL**. Select the **Media** panel, click the **Place Video From URL** button on the panel, type the URL, and then click **OK** (**New!**).

2. Navigate to the location with the file you want to import.

3. Select the sound or video file you want to place.

4. Click **Open**.

    The imported sound or movie is placed in a loaded preview cursor.

5. Click or drag a rectangle frame with the loaded cursor to place the clip in a new sound or movie frame, or click in an empty sound or movie frame (designated by diagonal lines) to place it in an empty frame.

Place Video From URL button ①

URL to a video on a Web server

Convert and Relink Legacy Media Files Using Adobe Media Encoder

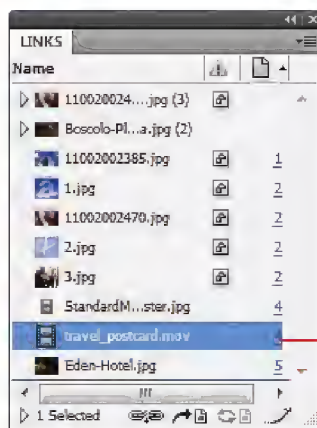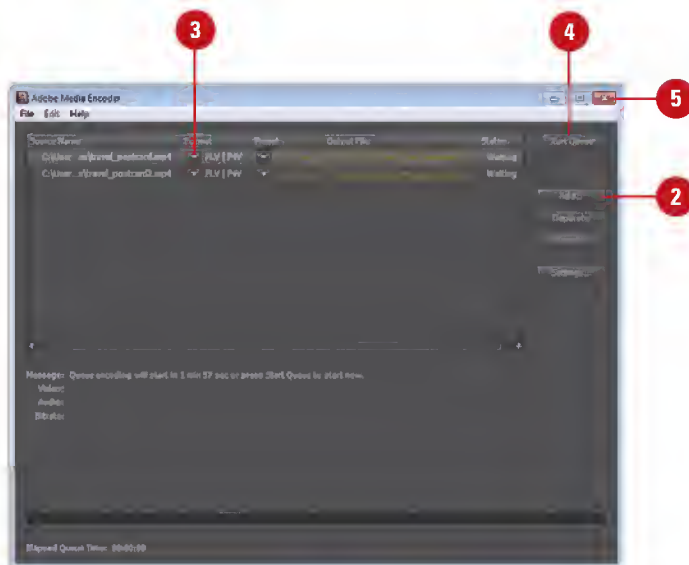**1** Start Adobe Media Encoder from the All Programs menu (Win) or the Applications folder (Mac).

> **IMPORTANT** *Adobe Media Encoder doesn't convert audio files to MP3. You need to use another program, such as iTunes.*

2 Click **Add**, select the media files you want to convert, and then click **Open**.

3 Select each media file, click the **Format** list arrow next to the file name, and then select a conversion file format.

4 Click **Start Queue**.

> The media files are converted to the new media format and placed in the same folder as the original media file.

5 When you're done, click the **File** menu, and then click **Exit**, or click the **Close** button.

5 To relink the media files, select the Links panel, Alt (Win) or Option (Mac) click the **Relink** button on the panel, select the replacement media file for each one (or click Skip if not available), and then click **Open**.

Legacy MOV video to relink

Did You Know?

You can preserve transformation when you update or reestablish a link. Click the Edit (Win) or InDesign (Mac) menu, point to Preferences, click File Handling, select the Preserve Image Dimensions When Relinking check box, and then click OK.
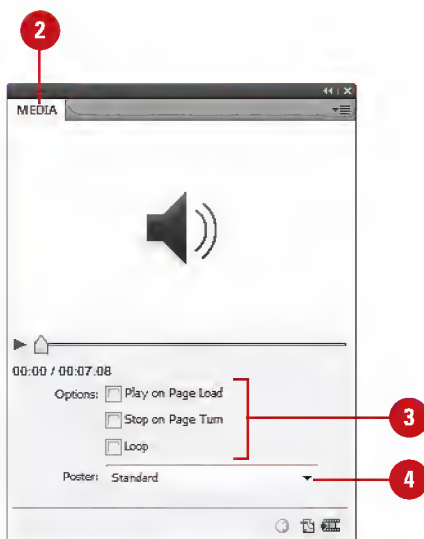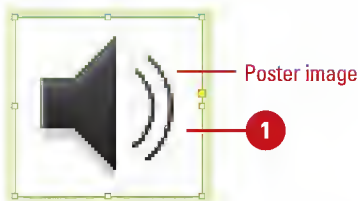
Setting Media Options

After you import media files into a document, you can use the Media panel (**New!**) to preview media, set playback and other properties. You can preview FLV, F4V, SWF, MP4, and MP3 files directly in InDesign; all other legacy media cannot be viewed in the Media panel. You can select the playback controls you want, and select the placeholder poster image for FLV, F4V, and MP4 files. A placeholder poster image is the still image that appears for the media in the frame, which you can change or remove later. In addition, you can create navigation points, which are time-code markers, that you can use with button actions to play a video starting from any of the navigation points (**New!**). You can work with media frames like any other frame in InDesign.

Set Sound Options

1 Select the sound clip.

2 Select the **Media** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Media**.

3 Select any of the following check boxes to enable the option:

◆ **Play on Page Turn.** Select to play the sound when turned to the page. If other objects are set to play, the Timing panel determines the order.

◆ **Stop on Page Turn.** Select to stop playing an MP3 sound when turned to a different page.

◆ **Loop.** Select to play the MP3 sound repeatedly.

4 Click the **Poster** list arrow, and then select a poster option:

◆ **None.** Removes poster image.

◆ **Standard.** Uses the file: *StandardSoundPoster.jpg*.

◆ **Choose Image.** Use the Browse button to select a bitmap graphic (BMP).
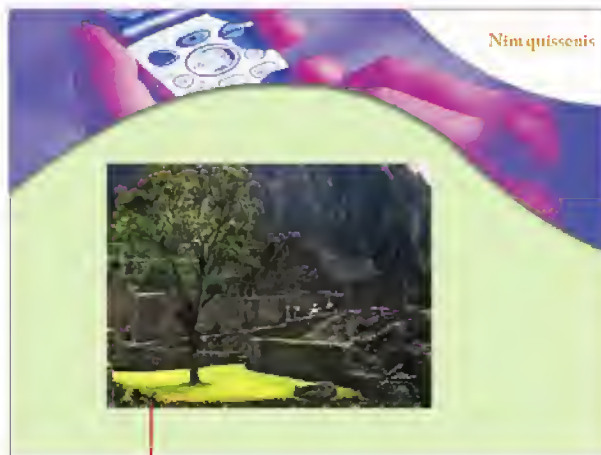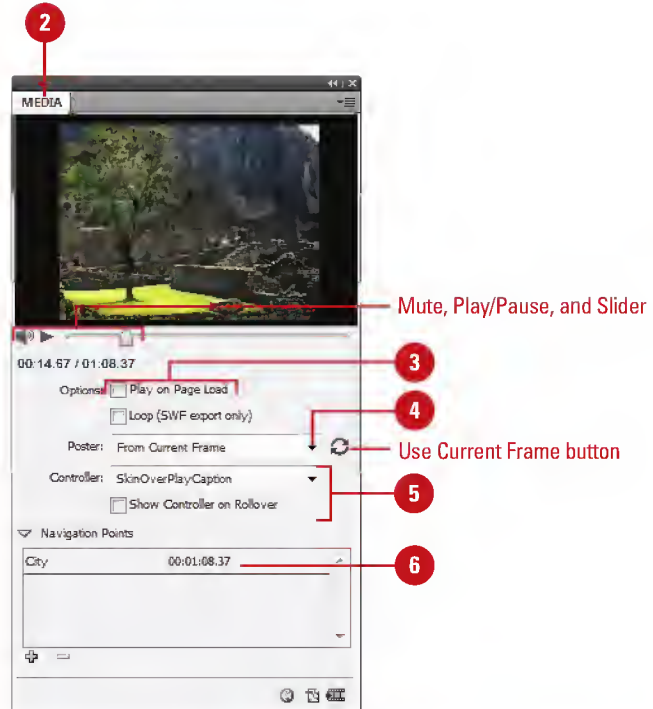

Poster image

Set Video Options

1 Select the video clip.

2 Select the **Media** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Media**.

3 Select any of the following check boxes to enable the option:

◆ **Play on Page Turn.** Select to play the video when turned to the page. If other objects are set to play, the Timing panel determines the order.

◆ **Loop (SWF export only).** Select to play the video repeatedly. For SWF Flash video, it only works in exported files.

4 Click the **Poster** list arrow, and then select a poster option:

◆ **None.** Removes poster image.

◆ **Standard.** Uses the file: *StandardMoviePoster.jpg*.

◆ **From Current Frame.** Uses the current frame displayed in the Media panel. Use the slider to change it, and then click the **Use Current Frame** button.

◆ **Choose Image.** Use the Browse button to select a bitmap graphic (BMP).

5 Click the **Controller** list arrow, select a playback control skin.

◆ **Show Controller on Rollover.** Select to show the controller when you point to the media.

5 To create a navigation point, drag the slider to a frame, and then click the **Add Nav Point** button, type a name, and then press Enter (Win) or Return (Mac). To remove a navigation point, select the point name in the list, and then click the **Delete Nav Point** button.
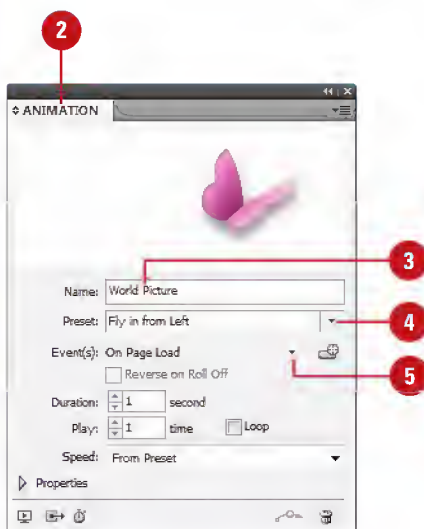

Mute, Play/Pause, and Slider

Use Current Frame button

Added video

Adding Animation with Motion Presets

In an InDesign document, you can add animation to objects for use in exported SWF files, not in an Interactive PDF. To add animation to a PDF, export a selection as a SWF and place it in an InDesign document, and then export it as a PDF. With the Animation panel (**New!**), you can animate an object quickly using motion presets, which are pre-defined animations that come along with InDesign. The motion presets are the same ones used in Adobe Flash Professional CS5. You can import any custom presets from XML created in Flash or save your own in InDesign. After you apply a motion preset, you can modify animation settings (**New!**), such as speed, duration, and when the animation plays. If you no longer want to use an animation, you can remove it.

Apply an Animation Motion Preset and Set Options

1. Select the object you want to animate.

2. Select the **Animation** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Animation**.

3. Type a descriptive name for the animation. The name is also used when you set up an action to play the animation.

4. Click the **Preset** list arrow, and then select a motion preset.

5. Click the **Event(s)** list arrow, and then select an event to play the animated object in the SWF file.

   ◆ **On Page Load.** Plays when the page is loaded (selected by default).

   ◆ **On Page Click.** Plays when the page is clicked.

   ◆ **On Click (Self).** Plays when the object is clicked.

   ◆ **On Roll Over (Self).** Plays when the object is pointed to. To reverse the action when you point off the object, select the **Reverse On Roll Off** check box.

   ◆ **On Button Event.** Plays when a button action takes place.

8 To create a button trigger, click the **Create Button Trigger** button, click an object to convert it to a button, and then set options in the Buttons panel.
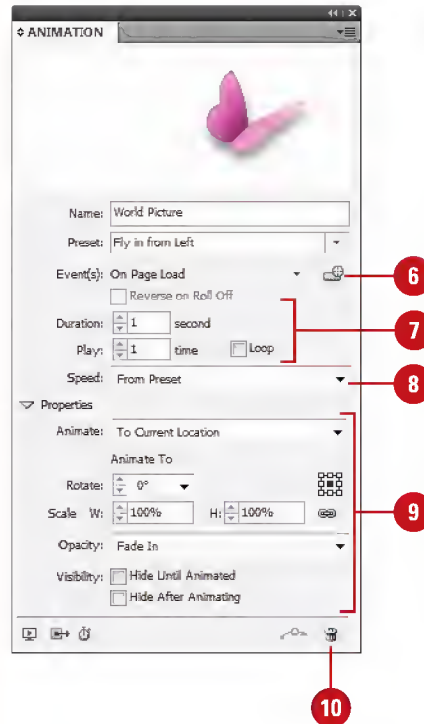
7 Specify a duration for the animation and the number of time the animation plays, or select the **Loop** check box to repeatedly play the animation.

8 Click the **Speed** list arrow, and then select an option: **From Preset** for the default, **None** for a steady rate, **Ease In** to start slow and speeds up, or **Ease Out** to start fast and slows down.

9 To use advanced options, click the Properties arrow, and then do any of the following:

◆ **Animate.** Select **From Current Appearance** or **To Current Appearance** to use the object's current properties as the starting or ending point. Select **To Current Location** to use the object's properties as the starting and ending point.

◆ **Rotate.** Specify a rotation angle the object completes.

◆ **Origin.** Uses the proxy to specify the origin point of the motion path.

◆ **Scale.** Specify a percentage to increase or decrease the size.

◆ **Opacity.** Select **None** (remains solid), **Fade In** (goes to visible), or **Fade Out** (goes to invisible).

◆ **Visibility.** Select the **Hide Until Animated** or **Hide After Animating** check boxes to make an object invisible before or after playback.

10 To remove an animation from an object, select the object, and then click the **Delete** button on the Animation panel.
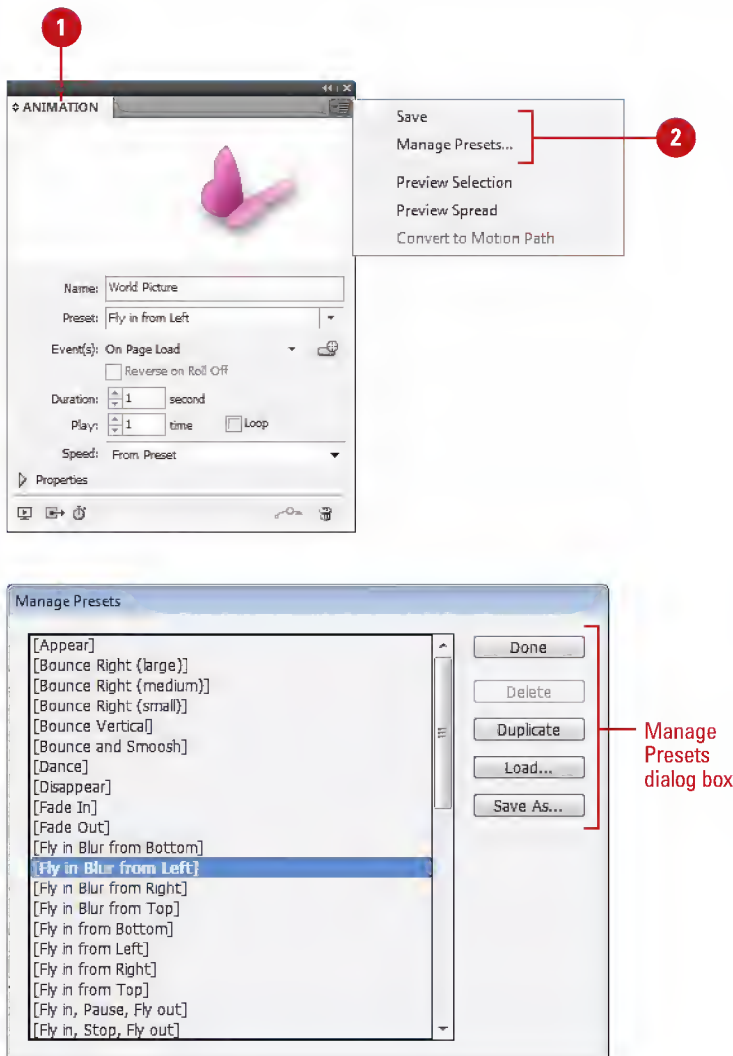
Working with Animations

With the Animation panel (**New!**), you can import any custom motion presets from XML created in Flash or InDesign, or save your own in InDesign. If you want to share your motion presets with other InDesign users, you can save them as an XML file, which they can in turn import. After you import, save, or duplicate motion presets, you can delete the ones you don't want. After you apply a motion preset to an object, you can change the motion path with the Direct Selection tool or Pen tool just like any other path in InDesign.

Manage Animation Motion Presets

1 Select the **Animation** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Animation**.

2 Perform any of the following management options:

◆ **Save Motion Presets.** Specify the settings you want to save, click the **Options** menu, click **Save**, type a name, and then click **OK**.

◆ **Delete Motion Presets.** Click the **Options** menu, click **Manage Presets**, select a preset, and then click **Delete**.

◆ **Duplicate Motion Presets.** Click the **Options** menu, click **Manage Presets**, select a preset, and then click **Duplicate**.

◆ **Save Motion Presets as XML.** Click the **Options** menu, click **Manage Presets**, select a preset, click **Save As**, type a name, specify a location, and then click **Save**.

◆ **Import Motion Presets as XML.** Click the **Options** menu, click **Manage Presets**, click **Load**, and then double-click the XML file you want.

Manage Presets dialog box

Edit a Motion Path

1 Select the **Direct Selection** tool on the Tools panel.

2 Click a blank area to deselect all points.

3 To select and move multiple anchor points and segments, hold the Shift key, and then click the anchor points or segments you want, or drag a rectangle marquee around the ones you want.

4 Drag an anchor point or drag the middle of a segment.

◆ For a smaller move, click the anchor point or segment, and then press an arrow key.

◆ To constrain the movement of anchor points or segments to 45 degrees, hold down Shift while dragging.

5 To reshape a curve segment, click an anchor point or a curve segment, and then drag a direction point at the end of the direction handle.

Did You Know?

You can convert selected objects to a motion path. Select the object you want to animate and the path you want to use as the motion path (cannot select more than two objects), select the Animation panel, click the Convert To Motion Path button on the panel, and then change settings in the panel.

You can change the direction of the motion path. Select the motion path, click the Object menu, point to Paths, and then click Reverse Path.
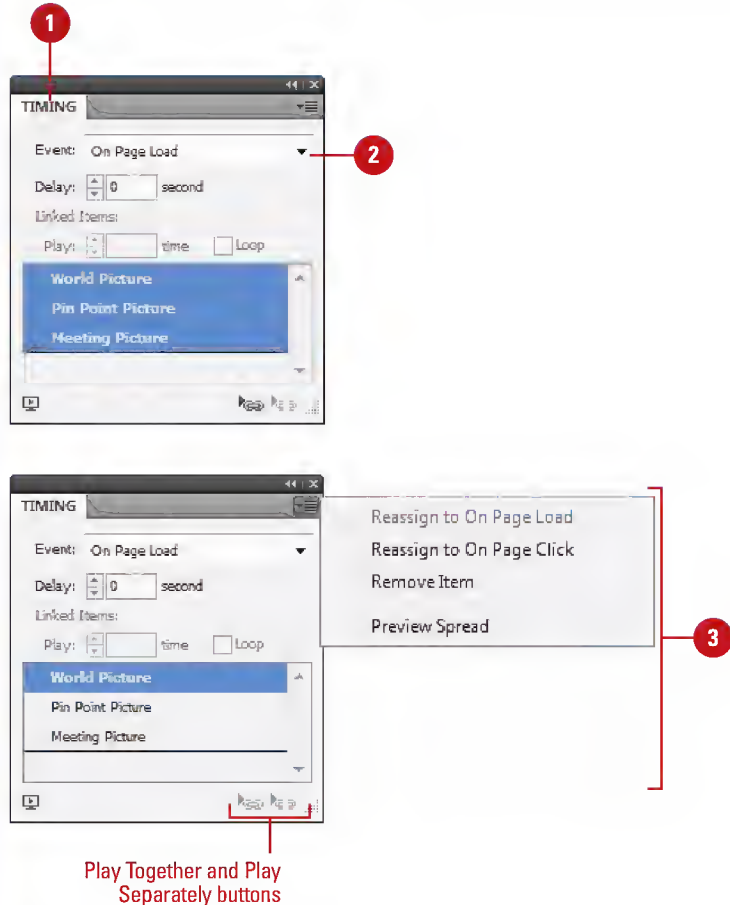

Edited motion path

Changing Animation Order

With the Timing panel (**New!**), you can change the order of when objects play an animation. Animated objects on the current spread appear in the Timing panel based on the page event assigned to each object animation, either On Page Load, On Page Click, or Unassigned. You can change the animation order, delay time, event assignment, and play animations together, separately, or linked.

Use the Timing Panel

1 Select the **Timing** panel.

- ◆ Click the **Window** menu, point to **Interactive**, and then click **Timing**, or click the **Show Timing Panel** button on the Animation panel.

2 Click the **Events** list arrow, and then select an event type: **On Page Load**, **On Page Click**, or **Unassigned**.

3 Perform any of the following:

- ◆ **Animation Order.** Drag elements up or down the list. Items at the top play first.

- ◆ **Delay Animation.** Select a element, and then specify the delay in seconds.

- ◆ **Play Multiple Animations Together.** Select the elements, click the **Play Together** button on the panel to link them. To unlink Play Together elements, select them, and then click the **Play Separately** button on the panel.

- ◆ **Play Linked Animations.** Select the linked elements, and then specify the number of play times or select the **Loop** check box.

- ◆ **Remove Animation.** Select a element, click the **Options** menu, and then click **Remove Item**.

- ◆ **Reassign Animation.** Select a element, click the **Options** menu, and then click **Reassign to On Page Load** or **Reassign to On Page Click**.

Play Together and Play Separately buttons

Adding Page Transitions

A page transition displays a visual effect, such as a wipe or dissolve, when you turn the page in an interactive document. You can apply page transitions directly in InDesign to individual pages or to all spreads at once with a single click. See previews of available transition types in the Page Transitions dialog box, and control the direction and speed of your transitions for export to Flash (SWF file) or PDF. When you export your document to a PDF, select the Interactive Elements option in the Export PDF dialog box to include page transitions. You can view the page transitions in Full Screen Mode in the PDF by pressing Ctrl+L (Win) or ⌘+L (Mac) in Adobe Acrobat or Reader; press Esc to exit from Full Screen Mode.
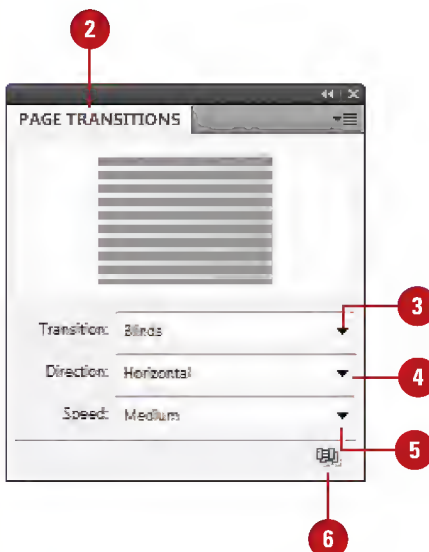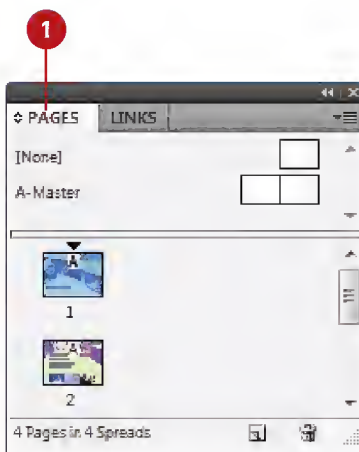
Apply a Page Transition

1 Select the **Pages** panel, and then select the spread to which you want to apply a page transition.

2 Select the **Page Transitions** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Page Transitions**.

3 Click the **Transition** list arrow, and then select a transition.

◆ To select a page transition from the Page Transitions dialog box, click the **Options** menu, click **Choose**, select a transition, and then click **OK**.

4 Click the **Direction** list arrow, and then select a transition direction.

5 Click the **Speed** list arrow, and then select a transition speed.

6 To apply the current transition to all spreads, click the **Apply To All Spreads** button on the panel.

2 To clear all page transitions, do either of the following:

◆ Click the **Transition** list arrow, and then click **None**.

◆ Click the **Options** menu, and then click **Clear All**.

Using the Buttons Panel

The Buttons panel is a centralized place to work with interactive buttons in InDesign. The Buttons panel makes it easy to create interactive buttons that perform actions when the document is exported to Flash (SWF file) or PDF. You can use buttons on the bottom of the panel to convert an object to a button and to delete buttons. You can also use the Options menu to view sample buttons, set options to show (make visible) or hide buttons in PDFs, as well as set panel options.
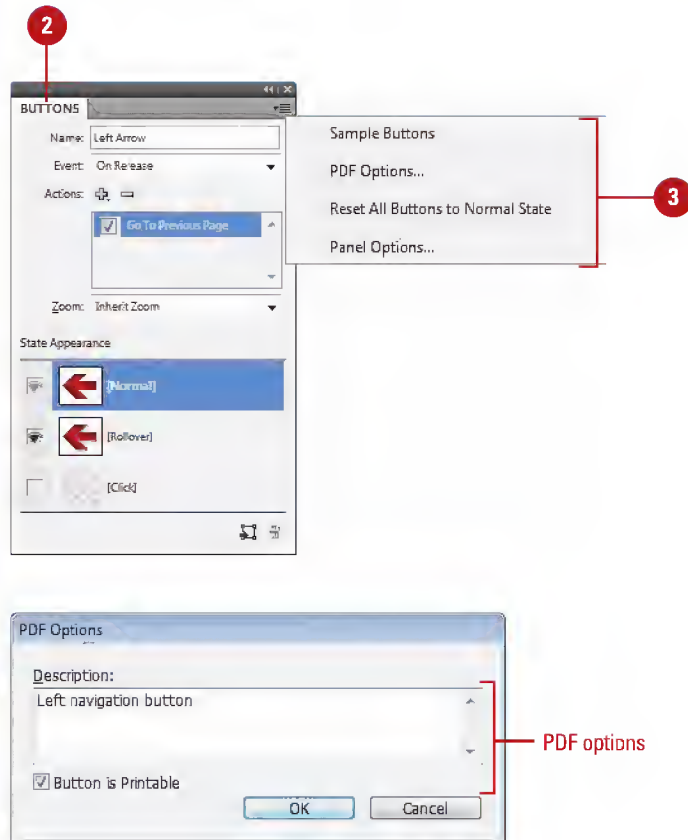
Use the Buttons Panel

1. Select the **Selection** tool on the tools panel, and then select a button to view or change.

2. Select the **Buttons** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3. Click the **Options** menu, and then select one of the following PDF options (a check mark appears next to the selected item):

   ◆ **Sample Buttons**. Opens the Sample Buttons panel to access and use pre-built buttons.

   ◆ **PDF Options**. Opens the PDF Options dialog box. Type a description to provide alternative text for visually impaired users. To make the button printable in the PDF, select the **Button is Printable** check box.

   ◆ **Reset All Buttons to Normal State**. Resets all buttons back to the normal state.

   ◆ **Panel Options**. Changes the thumbnail size in the Buttons panel.
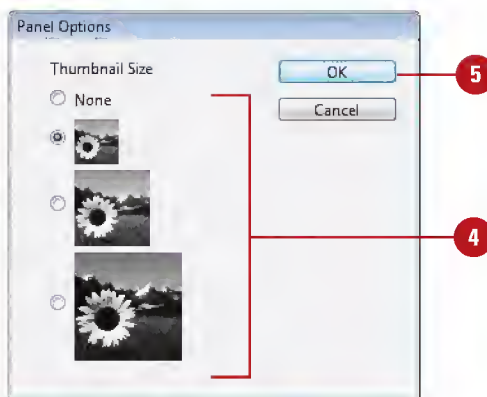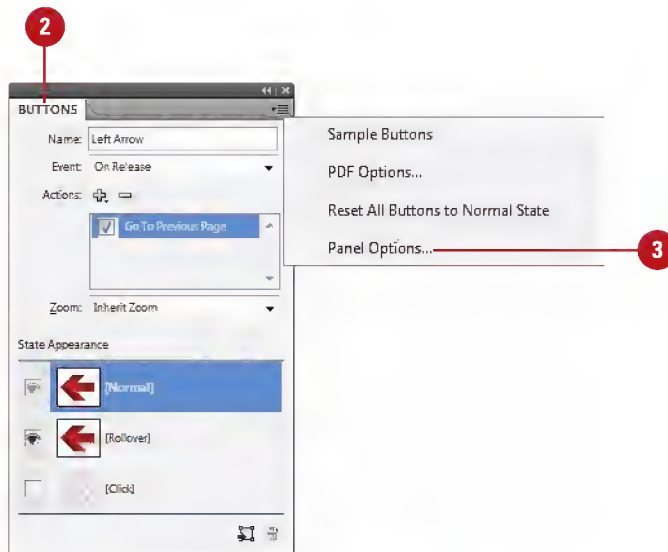

PDF options

Change the Buttons Panel Display

1 Select the **Selection** tool on the tools panel, and then select a button to view or change.

2 Select the **Buttons** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3 Click the **Options** menu, and then click **Panel Options**.

4 Select a thumbnail size.

5 Click **OK**.

Did You Know?

You can delete a button. Select the Buttons panel, select the button, and then click the Delete button on the panel.
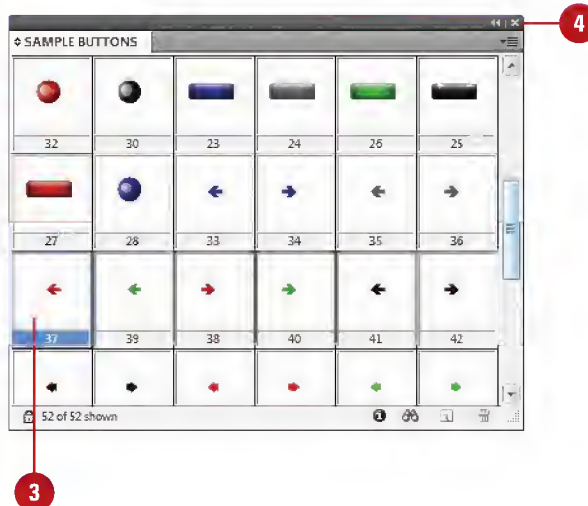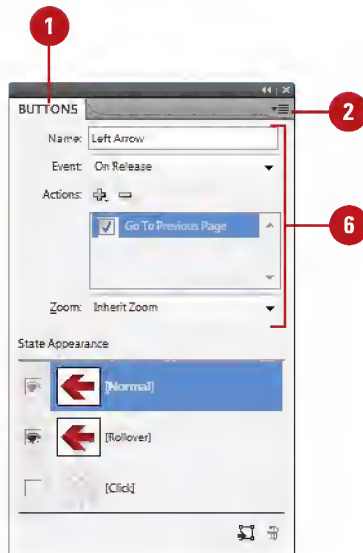
Creating Buttons

You can build interactive buttons to perform an action using the Buttons panel. For example, you can create a button to navigate within a dynamic document, launch a movie, play a sound, or open a Web page. You can create a custom button from a selected object in an InDesign document or select a button from the built-in Samples button library. The sample buttons include effects, such as adding gradient feathers and drop shadows. There are also assigned actions. For example, the arrow buttons are assigned the Go To Next Page or Go To Previous Page action.

Create a Button from a Sample

1. Select the **Buttons** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

2. Click the **Options** menu, and then click **Sample Buttons**.

   The Sample Buttons panel appears.

3. Drag a button from the Sample Buttons panel to the document.

4. Click the **Close** button on the Sample Buttons panel.

5. Select the button using the **Selection** tool on the Tools panel.

   ◆ You can drag a resize handle to change the size of the button, and then move it to where you want.

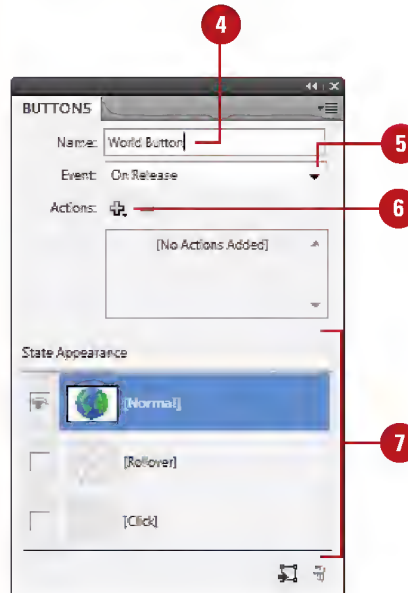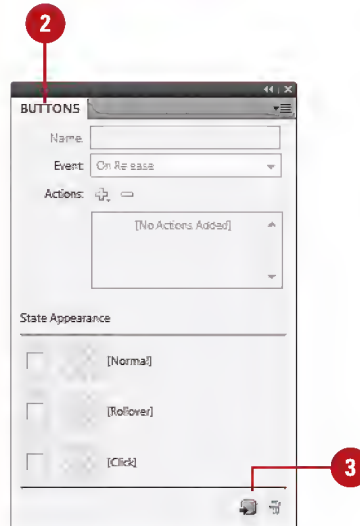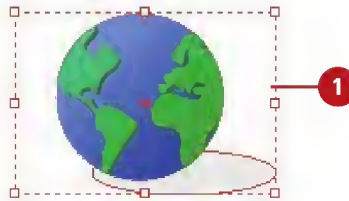5. Enter a name and make changes to the button settings in the Buttons panel.

Convert an Object to a Button

1 Create and select an object that you want to convert to a button.

> **IMPORTANT** *You can convert any object to a button except a sound, movie, or poster.*

2 Select the **Buttons** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3 Click the **Convert Object to Button** button on the panel.

4 Type a name for the button.

5 Click the **Event** list arrow, and then select an event type.

◆ The options include On Release, On Click, On Roll Over, On Roll Off, On Focus, and On Blur.

5 Click the **Add New Action** button, and then select an action to perform for the button.

◆ The options include Close, Exit, Go To First Page, Go To URL, Movie, Sound, and Open File, among others.

7 Specify the various options for the selected action type (options vary).

Did You Know?

You can convert a button to an object. Select the button, select the Buttons panel, click the Convert Button To An Object button, and then click OK.
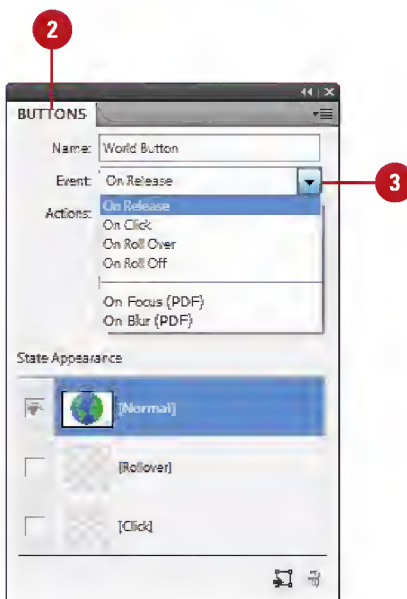
Working with Events and Actions

An event determines when to trigger an action that will execute a button operation. For example, the On Release event triggers an action when the mouse button is released after a button click. An action is associated with an event. You can assign an action type to a button to perform an action. For example, the Go To URL action type opens a web page in your default browser from the PDF document with the interactive button. You can create actions to navigate to anchor text or bookmarks, document pages and views, to launch a movie, play a sound, or open a web page. You can work with events and actions for a selected button in the Buttons panel.

Select Events for a Button

1. Select the **Selection** tool on the tools panel, and then select a button to change.

2. Select the **Buttons** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3. Click the **Event** list arrow, and then select an event type.

   ◆ **On Release.** Event occurs when the mouse button is released after a click.

   ◆ **On Click.** Event occurs when the mouse button is clicked.

   ◆ **On Roll Over.** Event occurs when the mouse pointer enters the button.

   ◆ **On Roll Off.** Event occurs when the mouse pointer moves off the button.

   ◆ **On Focus (PDF).** Event occurs when the button gets the focus using the Tab key.

   ◆ **On Blur (PDF).** Event occurs when the focus moves to another button or form field using the Tab key or mouse click.
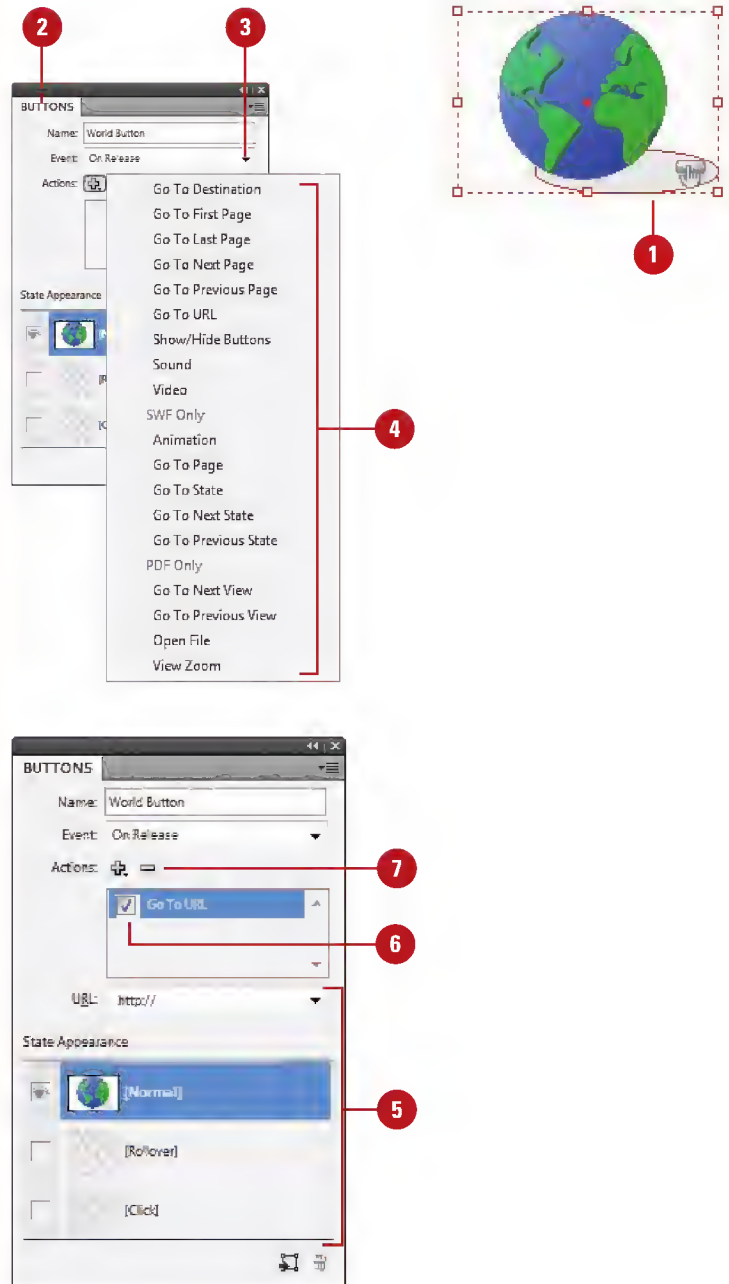
Add or Edit Actions for a Button

1. Select the **Selection** tool on the tools panel, and then select a button to change.

2. Select the **Buttons** panel.

   ◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3. Click the **Event** list arrow, and then select an event type.

4. Click the **Add New Action** button, and then select an action to perform for the button.

5. Specify the various options for the selected action type (options vary).

6. To enable or disable an action, select or deselect the check box next to the action name.

7. To delete an action, select the action, click the **Delete Selected Action** button, and then click **OK**.

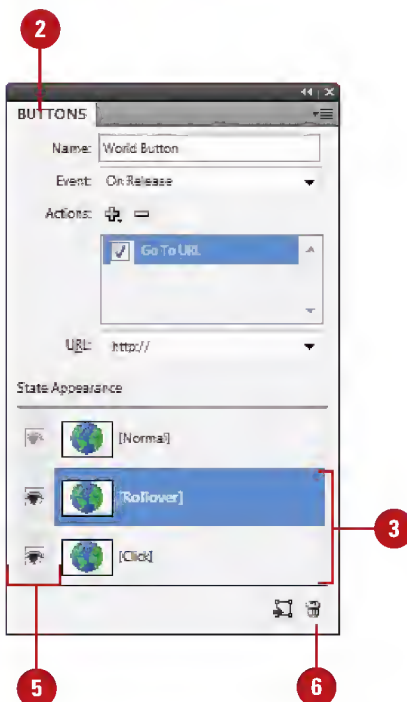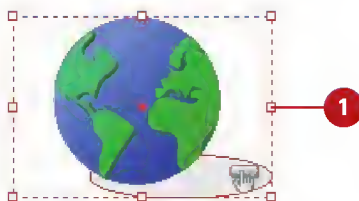8. To change an action order, drag an action to a new position.

Working with Button States

A button consists of a group of individual objects. When you view a button, an object appears. When you point to or click on a button, another object appears. Each object represents a button state. Each button can have up to three states: Normal, Rollover, and Click. The button is in Normal state when you don't point to or click on the button, Rollover occurs when you point to the button, and Click occurs when you click the button. You can work with button states for a selected button in the Buttons panel. When you activate a state in the Buttons panel, the Normal state (default) is copied to it. After it's copied, you can change the appearance of the button using InDesign color, text, and image tools.

Work with Button States

1 Use the **Selection** tool to select a button or use the **Direct Selection** tool to select a button as an individual object (state).

2 Select the **Buttons** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Buttons**.

3 Click the **[Rollover]** or **[Click]** state to activate it.

4 Use any of the following to change the state appearance in the layout view.

◆ **Change Color.** Use the **Color** and **Swatches** panel to select a color.

◆ **Add Text.** Select the **Type** tool, click a button, and then type.

◆ **Insert Graphic.** Click the **File** menu, click **Place**, and then double-click a graphic file.

5 To disable/enable a state, click the **Eye** icon next to the state. Disabled states (no Eye icon) are not exported to the SWF or PDF.

6 To delete a state, select the **[Rollover]** or **[Click]** state, and then click the **Delete** button on the panel (you can't delete Normal).
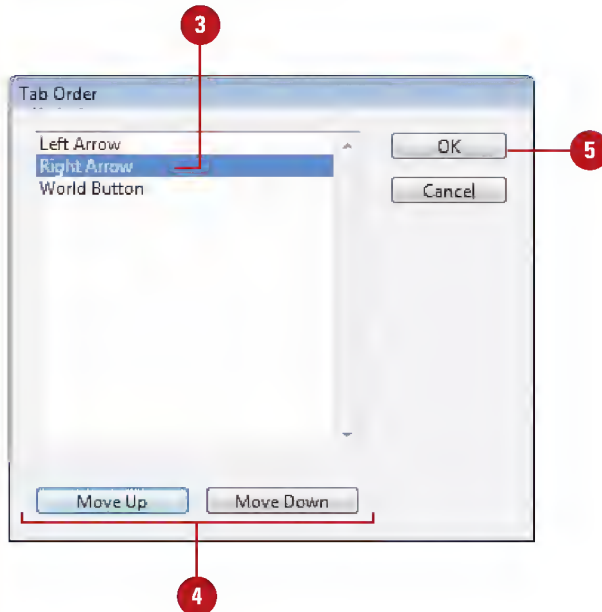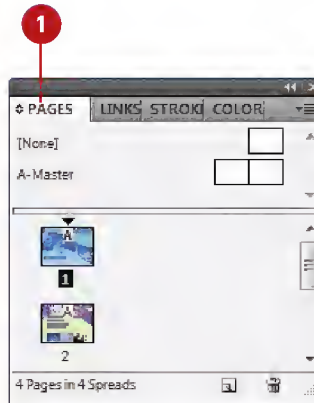
Setting Button Tab Order

The tab order determines when a button receives focus as you press the Tab key in a SWF or PDF document. When a button receives focus, you can press Enter (Win) or Return (Mac) to execute the button. You can also use the On Focus event to trigger an action when a button gets the focus. In the Tab Order dialog box, you can change the tab order for optimal use. The tab order includes buttons on hidden layers, but not buttons on master pages.

Set the Button Tab Order

1. Select the **Pages** panel, and then double-click the page containing the buttons you want to set the tab order for.

2. Click the **Object** menu, point to **Interactive**, and then click **Set Tab Order**.

   ◆ The tab order includes buttons on hidden layers, but not buttons on master pages.

3. Select the button you want to move.

4. Click the **Move Up** or **Move Down** buttons to adjust the order.

5. Click **OK**.
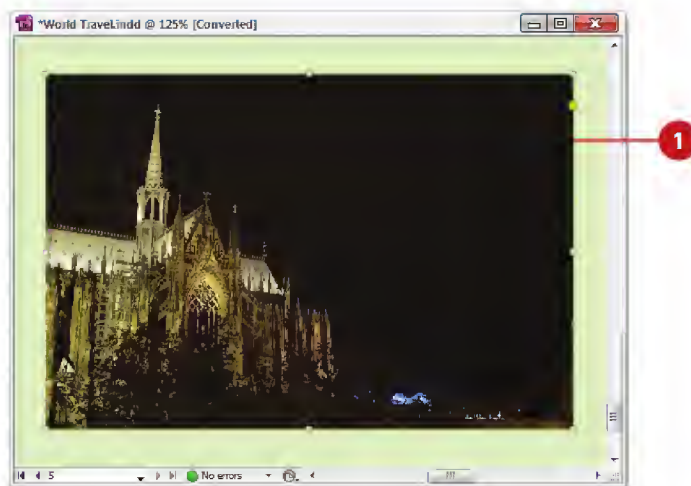
Creating Multi-State Objects

With the Object States panel (**New!**), you can create multiple versions of an object, known as a state, on a page. An object with multiple states is called a multi-state object. Each time you create a new state, you create a new version of the selected object to the page. Only one state is visible on the page at a time. For example, you can create a slide show for use in a PDF or SWF, where each image is stacked and aligned on top of each other as a multi-state object. When you print the document or export it as a PDF, only the active state appears. After you create a multi-state object, you can edit it in a variety of ways. You can edit an object in a state, add to or duplicate objects in a state, or delete a state and its contents. If you want to break apart a multi-state object, you can convert it to independent objects.

Create a Multi-State Object

1 Select the objects you want to convert into a multi-state object.

2 To stack the objects on top of each other, click the **Align Horizontal Centers** and **Align Vertical Centers** buttons on the Control or Align panel.

3 Select the **Object States** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Object States**.

4 Click the **Convert Selection To Multi-State Object** button on the panel.

The objects appears as states in the panel and a dashed frame border appears around them in the document.
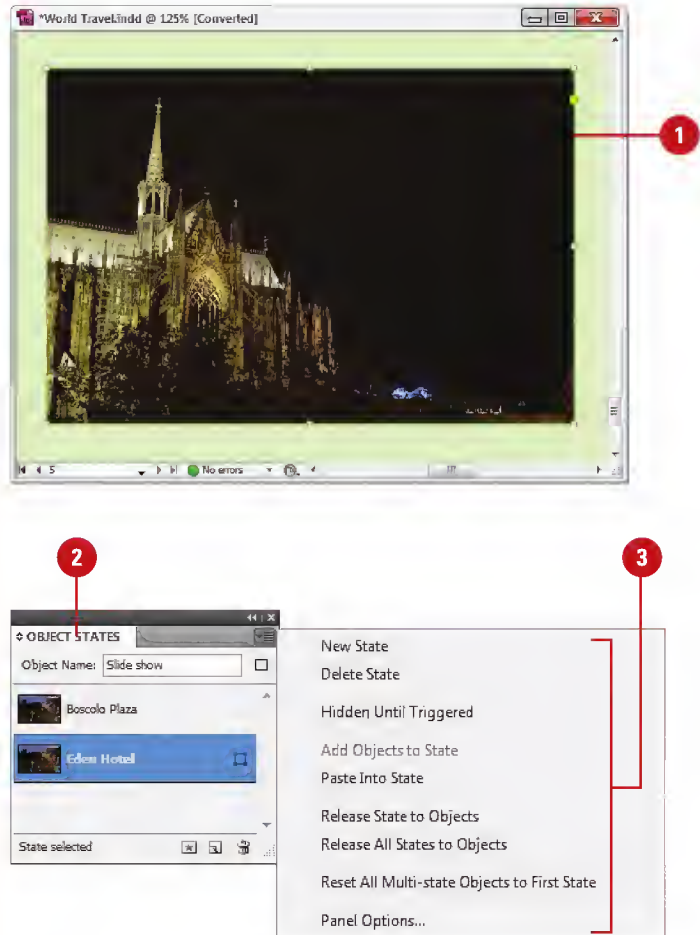
5 Type a name for the multi-state object.

5 Click the default state name, type name, and then press Enter (Win) or Return (Mac).

2 To select the multi-state object, click the **Multi-State** button.

◆ To select a state, click the state in the list.

Edit a Multi-State Object

1 Select a multi-state object.

2 Select the **Object States** panel.

◆ Click the **Window** menu, point to **Interactive**, and then click **Object States**.

3 Perform any of the following:

◆ **Edit a State.** Select the state in the panel, and then edit it in the document.

◆ **Add an Object to an Existing State.** Select the object and multi-state object, and then click the **Add Objects To Visible State** button on the panel.

◆ **Paste an Object to an Existing State.** Cut or copy the object to the Clipboard, select the multi-state object, select the state in the panel, click the **Options** menu, and then click **Paste Into State**.

◆ **Duplicate a State.** Select the state in the panel, click the **Options** menu, and then click **New State**.

◆ **Delete a State and Remove Contents.** Select the state in the panel, click the **Options** menu, and then click **Delete State**.

◆ **Convert a Multi-State Object to Independent Objects.** Select the state in the panel, click the **Options** menu, and then click **Release State To Object**.

◆ **Hide a Multi-State Object in an Export Until Triggered.** Click the **Options** menu, and then click **Hide Until Triggered**.

◆ **Reset All Multi-State Objects to the First State.** Click the **Options** menu, and then click **Reset All Multi-State Objects To First State**.
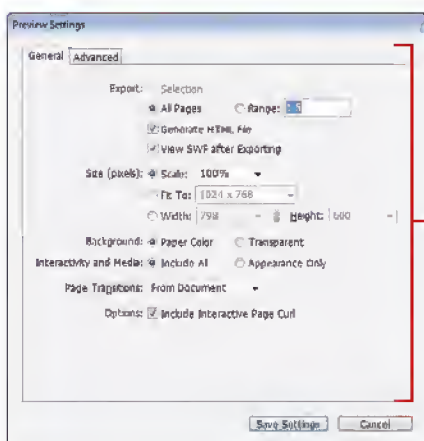
Using the Preview Panel

If you're working on an interactive document, you can use the Preview panel (**New!**) to view animation and interactivity for the current selection, current spread, or the entire document. If you want to test your interactive document in your browser, you can open it from the Preview panel. If the preview display is not exactly what you want, you can set general and advanced options in the Preview Settings dialog box to change it. Some of the options include size, background, interactivity and media, page transitions, frame rate, and image handling resolution, compression and quality.

Use the Preview Panel

1. Select the object or display the spread or document (interactive) you want to preview.

2. Select the **Preview** panel.
   - ◆ Click the **Window** menu, point to **Interactive**, and then click **Preview**.

3. Click a preview mode button on the panel: **Set Preview Selection Mode**, **Set Preview Spread Mode**, or **Set Preview Document Mode**.

4. To play the preview, click the **Play Preview** button on the panel.
   - ◆ To erase the preview, click the **Clear Preview** button on the panel.

5. To set preview settings, click the **Options** menu, click **Edit Preview Settings**, select the options you want on the General and Advanced tabs, and then click **Save Settings**.

5. To test in your browser, click the **Options** menu, and then click **Test in Browser**.

Viewing the HTML Behind the Page

Viewing the HTML Behind the Page

14

Introduction

In the world of the Internet, the graphics, text, animation, and all the "stuff" that the visitor sees displayed in their browser is the front end of a Web page, and the power behind the page is the HTML code. The HTML code sits quietly behind the scenes, letting the front end get all the credit; however, without the code, the Internet would fall apart. It's the cosmic glue that holds the whole thing together.

Designers, like myself, remember when there were no graphical design interfaces (like Dreamweaver), and all Web pages were designed code line, by tedious code line. I remember working by candlelight into the wee hours of the morning, until I thought my head was going to burst... okay, so maybe I didn't use candles, but it was a lot of painstaking work. Although Dreamweaver changed all of that with its intuitive graphical design interface, the code is still there. However, we're not the ones doing the coding, Dreamweaver is... and isn't that nice?

What You'll Do

Understand HTML

Use the Reference Panel

Use Code View

Use Live Code View

Set Code View Options

Enter HTML Code

Use Code Hints

Work with HTML Head Tags

Insert HTML Comments

Use the Coding Toolbar

Use Quick Tag Editor

Use the Tag Inspector and Chooser

Open Related Files

Navigate to Related Code

Set Site Specific Code Hints

Set Code Hint Preferences

Set Code Format Preferences

Set Code Rewriting Preferences

Set Code Color Preferences

Understanding HTML

HTML stands for the HyperText Markup Language. HTML code is the major language of the Internet's World Wide Web. Web sites and Web pages are written in HTML code. With HTML code and the World Wide Web, you have the ability to bring together text, pictures, sounds, and links... all in one place! HTML code files are plain text files, so they can be composed and edited on any type of computer... Windows, Mac, UNIX, whatever.

HTML documents look a lot like word processing documents. You can have text that's bold and italicized, larger and smaller, or it can look typewritten. The HTML code might look something like this:

You can have bold and <i>italicized</i>, Larger and Smaller, or it could look <tt>typewritten</tt>.

Most HTML code is enclosed within braces < >, and when you place the code between the braces it's said to be a tag. An HTML **tag** is code inserted in a document that specifies how the document, or a portion of the document, should be formatted. For example, the tag is saying to start bold text, and the tag is saying to stop bold text. The tag with the slash (/) is known as the closing tag. Many opening tags require a following closing tag, but not all do. Tags make up the entire structure of an HTML document.

HTML files are just normal text files; they usually have the extension of .htm, .html, or .shtml. HTML documents have two parts, the head and the body. The body is the larger part of the document, as the body of a letter you would write to a friend. The head of the document contains the document's title and similar information, and the body contains most everything else.

Common Tags

Symbol	Defines
<html>	Start of the HTML document
<head>	The document heading
<body>	The body of the document
<title>	The document title
<div>	A section in a document
<span>	A section in a document
<h1>	Text heading
<p>	A paragraph
<style>	Format of text
<img>	An image placeholder
<a>	A hyperlink
<iframe>	An inline frame
<!-- comment -->	A comment

Here's an example of a basic HTML document:

```
<html>

<head><title>Title goes here</title></head><body>Body goes here</body>

</html>
```

You may find it easier to read if you add extra blank lines such as follows...

```
<html>
<head>
<title>Title goes here</title>
</head>
<body>
Body goes here
</body>
</html>
```

Extra spaces and line breaks (blank lines) are ignored when the HTML is interpreted (displayed) by a Web browser, such as Microsoft Explorer or Apple Safari... so add them if you wish.

When working with HTML code, it's all about the tags. The HTML tags instruct the text how to look and how it's formatted. In addition, tags control graphics, animation, in short... everything. For example the following uses the or bold tag:
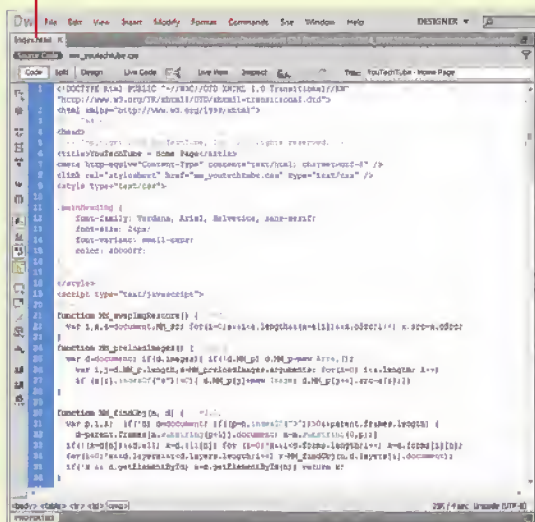
The cow jumped OVER the moon.

When displayed within a browser it would look like this:

The cow jumped **OVER** the moon.

The start tag instructs the text following the tag to use boldface; the end tag instructs the text to stop boldface and return to normal.
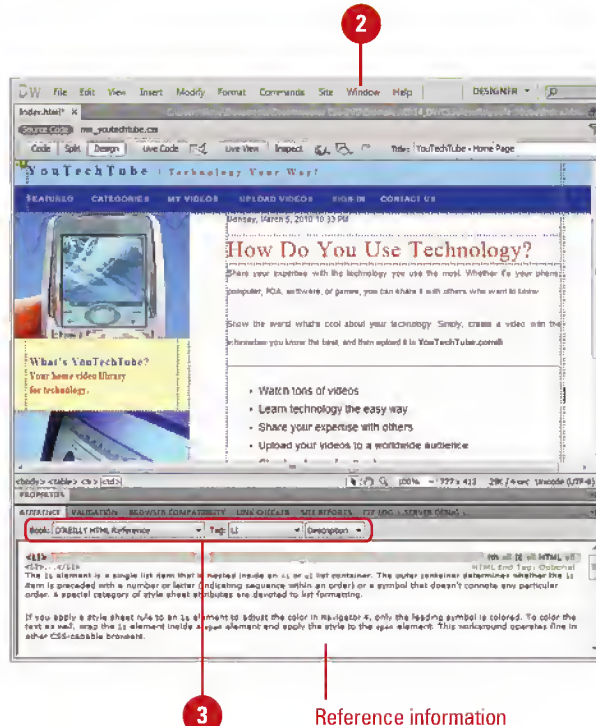
HTML page in Code view

HTML page in Design mode

Using the Reference Panel

It doesn't matter whether you're an experienced Web designer, or a newcomer to the field. Sooner or later you're going to need a bit of help, in the form of reference material. I'll admit that I'm a big reader… I love to read. I have a library full of books on creativity and design. Unfortunately, I can't carry all those books with me when I'm on a lecture tour. That's why one of my favorite features in Dreamweaver is the Reference panel. The Reference panel gives you instant (on screen) access to 10 O'Reilly reference manuals, 2 Adobe manuals, and a UseableNet Accessibility Reference. Now that's a lot of reading material, and instant information at your fingertips. For example, you're coding a page, and you need a bit more information on the HTML body tag… it's there, or you need a bit of help with the new syntax of XHTML… it's there. As a matter of fact, when you first open the Reference panel, the information displayed is based on the selected element on the active Web page.

Access the Reference Panel

1. Open Dreamweaver (do not open a document).

2. Click the **Window** menu, point to **Results**, and then click **Reference**.

3. Select information based on the following options:

   ◆ Click the **Select Book** list arrow to select from the list of available reference manuals.

   ◆ Click the **Select Tag** list arrow to select from a list of available HTML tags.

   ◆ Click the **Select Attribute** icon to choose from a list of available attributes for the selected tag.

   The reader window displays the information based on your selections.

Reference information

Access Specific Information

1 Open the Web page you want to access specific information.

2 Perform one of the following:

◆ **Code View.** Select a specific HTML tag, CSS style rule, or other HTML text.

◆ **Split View.** Select an item in the Code pane or select an object or text in the Design pane.

◆ **Design View.** Select an object, graphic, or portion of text.

3 Select the element for which you want specific information.

4 Press Shift+F1 (Shortcut for accessing the Reference panel).

The panel opens and displays information about the selected page element.

Reference information for the selected element

Did You Know?

You can search for tags, attributes, or text in code. Click the Edit menu, click Find And Replace, specify the Find in document, select Source Code in the Search list arrow, enter the text you want to find, enter the replace text (optional), specify any options, and then click the Find or Replace buttons you want.

You can save and reuse searches. Click the Edit menu, click Find And Replace, set the search criteria you want, click the Save Query button (the disk icon), navigate to the folder where you want to save the search, and then click Save. To reuse a search, click the Load Query button (the folder icon), navigate to the folder with the saved search query file, select it, click Open, and then use the Find or Replace buttons you want.

Using Code View

Dreamweaver utilizes three document code views: Code and Design, Code, and Split Code. The Code and Design view gives you a look at the code and the visual design, the Code view gives you a straight look at the HTML code of your Web page, and the Split Code view gives you a multi-pane look at the HTML code. When you work in any of the code views, you're going back to the basics of Web design… the actual code that makes it all happen. Some designers never look at the code, and some designers claim that you can't be good at creating Web pages without knowing the code. To be honest, I'm in the second camp. I believe that to really understand the design of a Web page, you need to know how the code makes a page function.

Access the Code View

1 Open the Web page you want to view code.

2 Access the Code view using one of the following methods:

◆ **Code and Design View.** Click the **View** menu, and then click **Code and Design**, or click the **Split View** button on the document window.

◆ **Code View.** Click the **View** menu, and then click **Code**, or click the **Code View** button on the document window.

◆ **Split Code View.** Click the **View** menu, and then click **Split Code**.

The document view changes to display the current page code.

3 To change the placement of content in a split screen, click the **View** menu, and then click **Split Vertically** (horizontal when unchecked), or **Design View on Left** or **Design View on Top**.

Code in Split view

Split views appear vertically by default.

Did You Know?

You can adjust the size of the panes in Split view. Drag the splitter bar located between the two panes.

View Code in a Separate Window Using Code Inspector

① Open the Web page you want to view code.

② Click the **Window** menu, and then click **Code Inspector**.

③ Use the toolbar to select from the following options:

◆ **File Management.** Get, put, check in or check out a file.

◆ **Preview/Debug In Browser.** Preview or debug the file in a browser or Device Central.

◆ **Refresh Design View.** Refreshes Design view to reflect code changes in Code view.

◆ **Reference.** Opens the Reference panel.

◆ **Code Navigation.** Allows you to move quickly in the code.

◆ **View Options.** Allows you to change the way code appears in Code view.

④ When you're done, click the **Close** button.

Did You Know?

You can use the coder-oriented work-space. The workspace displays the panel groups docked on the left side of the main window, and the Document window appears in Code view. The Properties panel is collapsed. Click the Window menu, point to Workspace Layout, and then click Coder.

Using Code Live View

As you work in Live view, you can also view live code. Similar to Live view, Live Code view is a non-editable view. Live code view appears displaying the code that the browser uses to execute the page. The non-editable code is highlighted in yellow. If you want to edit the code, all you need to do is return to Live view, and then switch to Code view, which is editable. After making your code changes, you can return to Live view and then refresh it to see your changes.

Access Live Code View

1 Open the Web page you want to view.

2 Switch to Design view or Code and Design view.

3 Click the **Live View** button.

4 To go to Live Code view, click the **Live Code** button.

Live code view appears displaying the code that the browser uses to execute the page. The non-editable code is highlighted in yellow.

5 To return back to Live view, click the **Live Code** button again.

5 To return back to Design view, click the **Live View** button again.

Did You Know?

You can print code. Open the Web page you want to print in Code view, click the File menu, click Print Code, specify the options you want, and then click OK (Win) or Print (Mac).

Setting Code View Options

You can select Code view options to change the way code appears in Code view. When you select the Code View Options command on the View menu or use individual buttons on the Code toolbar, you can set options to set word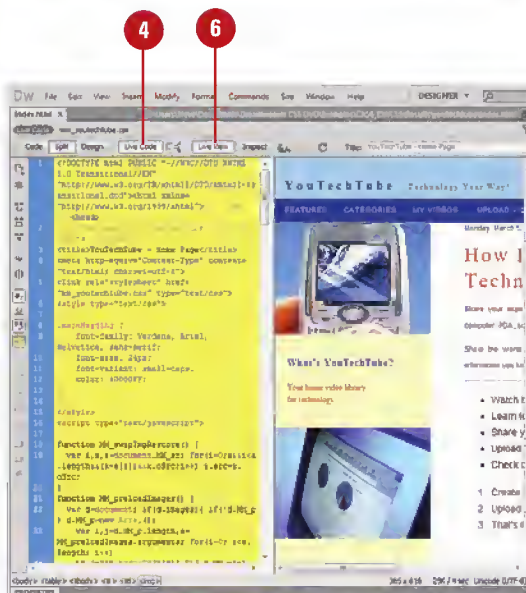 wrapping, display line numbers, hide characters, highlight invalid code, color code, indent code automatically, and display syntax error alerts in the Info bar.

Use Code View Options

1 Open the Web page you want to view code.

2 Switch to the Code view.

3 Click the **View** menu, point to **Code View Options**, and then select from the following options:

◆ **Word Wrap.** Forces the HTML code to wrap, based on the width of the Code view window.

◆ **Line Numbers.** Displays line numbers to the left of the HTML code.

◆ **Hidden Characters.** Displays hidden code elements, such as tabs and character returns.

◆ **Highlight Invalid Code.** Highlights any code that Dreamweaver considers incorrect.

◆ **Syntax Coloring.** Colorizes the HTML code, to visibly separate it from the text.

◆ **Auto Indent.** Automatically indents the HTML code to aid in readability.

◆ **Syntax Error Alerts in Info Bar.** Displays syntax code error alerts in the Info bar.

Entering HTML Code

You can enter HTML code in Code view like you are typing text into a word processor. However, when you type HTML code, it uses a specific structure and layout. As you type, the Code Hints popup menu appears to help you enter correct HTML code tag names, attributes, and values as you type code in Code view or the Quick Tag Editor. For example, when a tag requires the selection of a color, Dreamweaver displays a color palette. When a font is required, a font list is automatically displayed, and when a file is required a browse button magically appears allowing you to select and insert the file. If a page does contain invalid code, it appears in Design view and optionally highlights in Code view. When you select the invalid code, the Properties panel displays information as to why the code is invalid and steps to fix it.
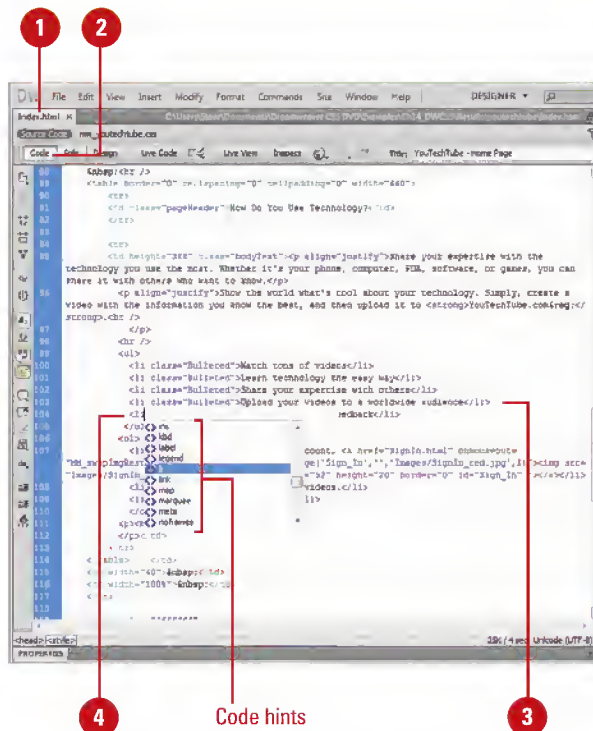
Enter HTML in Code View

1 Open the Web page you want to view code.

2 Switch to the Code view.

3 Click to the right of a tag and press Enter to create a space between the opening and closing body tag.

4 Enter the HTML code you want on the new line.

◆ **Code Hints**. When you type the left brace "<" the Code Hints popup menu appears, listing all possible HTML codes. Begin entering in the code name, and Code Hints will display the correct code. Double-click it or select it and press Enter (Win) or Return (Mac) to add the tag.

TIMESAVER *Press Control+Spacebar to display a Code Hints popup menu or press Esc to close the Code Hints menu.*

5 To indent the selected code, press Tab; to outdent the selected code, press Shift+Tab.

6 To add a closing tag, type a left brace and forward slash "</", and Dreamweaver will automatically insert the correct closing tag.

7 To remove a tag, right-click in the tag, and then click **Remove Tag**.

Code hints

Using Code Hints

Code hints makes it easy to insert and edit code accurately in a variety of languages. Dreamweaver supports code hinting for the following languages and technologies: HTML, CSS, DOM, JavaScript, Ajax, Spry, Adobe ColdFusion, JSP, PHP (**New!** for functions, variables, and classes and tooltip help), MySQL, ASP JavaScript, ASP VBScript, ASP.NET C#, and ASP.NET VB. As you start to type code for a particular code type, the Code Hints popup menu appears to help you enter it correctly. When you type a right angle bracket (<), code hint displays HTML tag names. When you type a period (dot operator) after an object, code hint displays JavaScript code possibilities. Dreamweaver also provides code hinting for your own or third-party custom JavaScript classes that are not built in to the language. If Dreamweaver detects problems with your code, code hints doesn't always work properly. Use the Syntax Error Information Bar to help you fix the code problems.
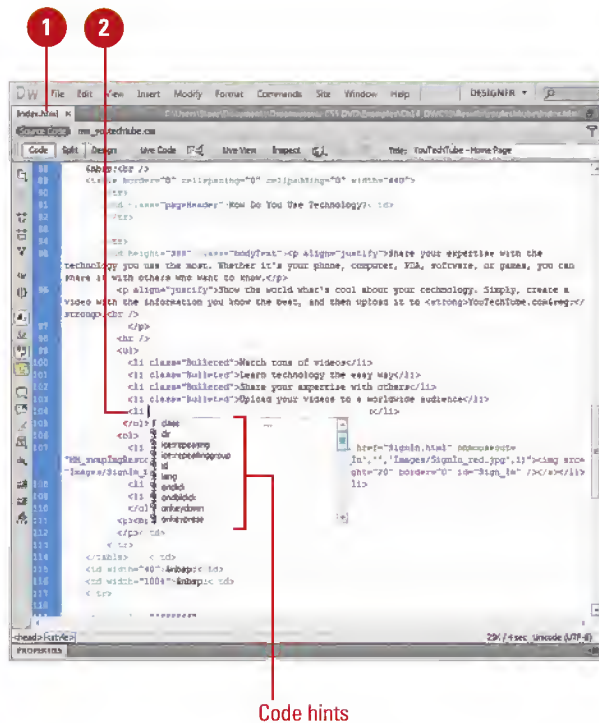
Use Code Hints

1. Open the Web page you want to view code.

2. Place the insertion point where you want to add code.

3. Start to type the code you want or press Control+Spacebar to manually display the code hints popup menu.

4. Scroll through the list by using the scroll bar or pressing the Up Arrow and Down Arrow keys.

5. To insert a code hint, double-click an item, or select it and then press Enter (Win) or Return (Mac).

   ◆ Press Backspace (Win) or Delete (Mac) to dismiss the list of code hints.

6. To edit code, delete the code, and then start typing what you want to use for code hints.

Code hints

See Also

See "Setting Code Hint Preferences" on page 344 for more information on setting options for code hints.
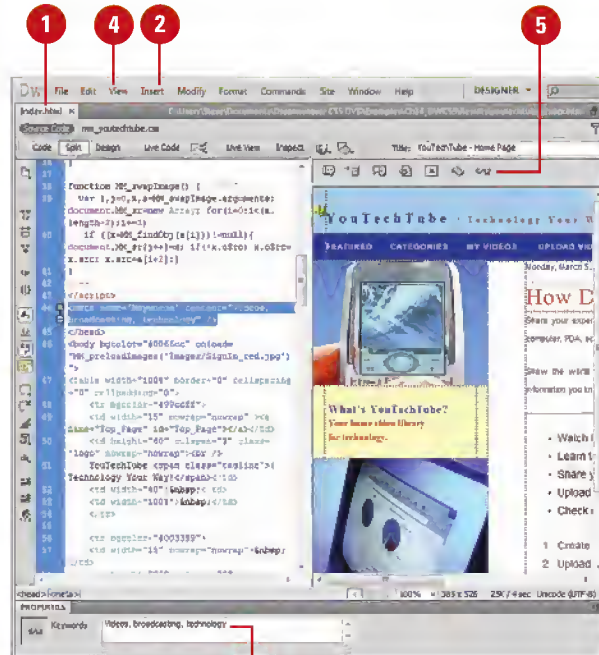
Working with HTML Head Tags

Each page contains information about the document in the head section. You can set the properties of head elements to control how your pages are identified on the Web by search browsers. You can insert the following head tags: meta, keywords, description, refresh, base, or link. A **meta** tag records information about the current page, such as encoding, author, copyright, or keywords. The **keywords** and **description** tags record information many search engines, such as Google or Yahoo, look for to create an index for your page for use in their search results databases. For the best results, specify a few descriptive keywords and a short description for a page. The **refresh** tag specifies the amount of time before the page is refreshed in a browser. The **base** tag sets the base URL that all document-relative paths in the page use. The **link** tag defines a relationship between the current page and another file. After you insert a head tag, you can always make changes and adjustments by using the head content, selecting the head element, and making changes in the Properties panel.

View and Insert Head Tags

1. Open the Web page you want to view and change head properties.

2. To insert head tags, click the **Insert** menu, point to **HTML**, point to **Head Tags**, and then select the tag you want: Meta, Keywords, Description, Refresh, Base, or Link.

3. Enter the information or specify the options you want, and then click **OK**.

4. Click the **View** menu, and then click **Head Content**.

5. To edit an element, click one of the icons in the head section to select it, and then change the properties you want in the Properties panel.

Did You Know?

You can check for balanced tags and braces. In Code view, click to place the insertion point where you want to check, click the Edit menu, and then click Select Parent Tag or Balance Braces. You can select the commands again to check the next level out.

Edit keywords in the Properties panel

Inserting HTML Comments

If you're writing large sections of code or working with other people to develop a site, it's important to insert comments into your HTML code. An HTML comment is descriptive text that explains the purpose and process for the page's code. The comment text only appears in Code view; the information is for internal development purposes only. You can insert comments in Code view or Design view. After you insert a comment, you can edit it directly in Code view, or select the comment marker and make changes in the Properties panel.

Insert HTML Comments

1. Open the Web page you want to insert comments.

2. Click to place the insertion point where you want to insert a comment (in Code or Design view).

3. Click the **Insert** menu, and then click **Comment**.

4. Type the comment you want.

5. Click **OK** (in Design view).

Did You Know?

You can change the code using the Selection submenu. Select the code you want in Code view, right-click (Win) or control-click (Mac) it, point to Selection, and then click the selection command you want.

You can copy and paste code. Copy the code from Code view or from another program, click to place the insertion point in Code view where you want to paste the code, click the Edit menu, and then click Paste.

See Also

See "Working with Invisible Elements" on page 88 for information on displaying comment markers in Design view.

Using the Coding Toolbar

When you switch to Code or Split view, the Coding toolbar appears along the left side of the Code view pane. The toolbar provides easy access to the most common coding related commands. If the Code view pane is not large enough, an expander arrow appears, which you click to access additional buttons. Some of the tools allow you to collapse and expand the content between a set of opening and closing tags, select tags, insert and remove comments, format code, and highlight invalid code.
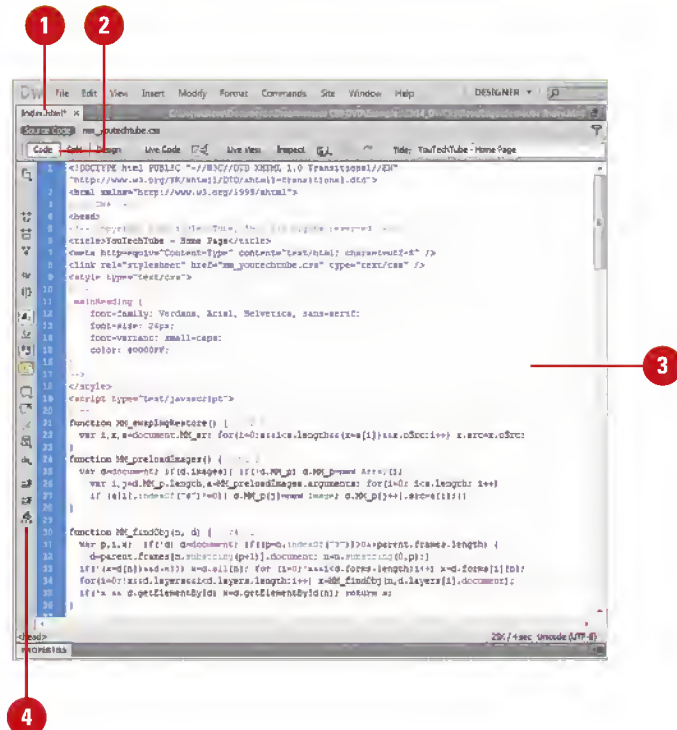
Use the Coding Toolbar

1. Open the Web page you want to view code.

2. Switch to Code or Split view.

3. Click to place the insertion point in the code or select a block of code.

4. Click the button you want on the Coding toolbar:

   ◆ **Open Documents.** Displays a list of open documents. Click the one you want to open it.

   ◆ **Show Code Navigator.** Displays the Code Navigator in the code.

   ◆ **Collapse Full Tag.** Collapses the content between a set of opening and closing tags. You need to place the insertion point in the opening or closing tag.

   ◆ **Collapse Selection.** Collapses the selected code.

   ◆ **Expand All.** Restores all collapsed code.

   ◆ **Select Parent Tag.** Selects the code tag immediately outside of the line with the insertion point.

   ◆ **Balance Braces.** Selects the code tag and surrounding parentheses, braces, or square brackets of the line with the insertion point.

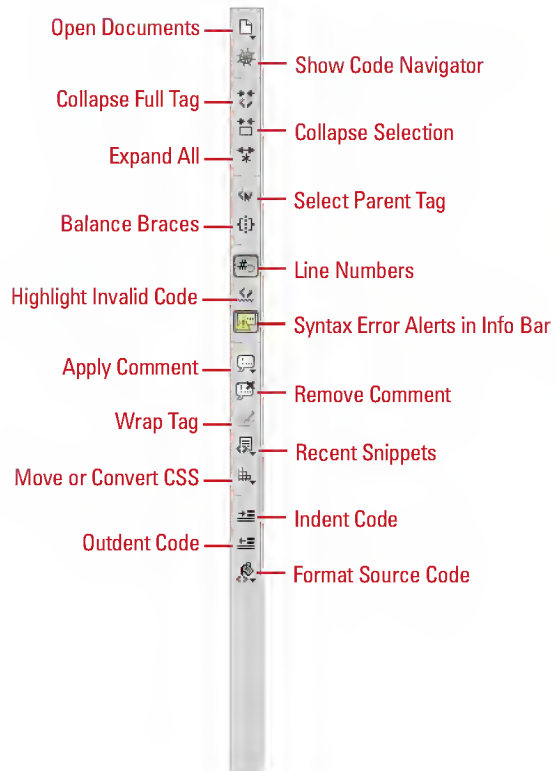   ◆ **Line Numbers.** Shows or hides the numbers at the beginning of each line of code.

◆ **Highlight Invalid Code.** Highlights invalid code in yellow.

◆ **Syntax Error Alerts in Info Bar.** Displays syntax code error alerts in the Info bar.

◆ **Apply Comment.** Inserts comment tags around the selected code, or opens new comment tags.

◆ **Remove Comment.** Deletes comment tags from the selected code.

◆ **Wrap Tag.** Wraps selected code with the selected tag from the Quick Tag Editor.

◆ **Recent Snippets.** Inserts a recently used code snippet from the Snippets panel.

◆ **Move or Convert CSS.** Moves CSS to another location or converts inline CSS to CSS rules.

◆ **Indent Code.** Shifts the selection to the right.

◆ **Outdent Code.** Shifts the selection to the left.

◆ **Format Source Code.** Displays options to apply source code formatting to selected code, or to the entire page if no code is selected. You can also access Code Format Settings from the Preferences dialog box or the Tag Library Editor.

TIMESAVER *You can perform many of these same commands on the Insert panel.*

See Also

See "Moving CSS Rules" on page 226 for information on moving CSS rules to a style sheet.

Open Documents — Show Code Navigator — Collapse Full Tag — Collapse Selection — Expand All — Select Parent Tag — Balance Braces — Line Numbers — Highlight Invalid Code — Syntax Error Alerts in Info Bar — Apply Comment — Remove Comment — Wrap Tag — Recent Snippets — Move or Convert CSS — Indent Code — Outdent Code — Format Source Code

For Your Information

Identifying Syntax Errors

If you open a page with syntax errors, Dreamweaver displays a semi-transparent red color to mark the code view gutter on all the lines that have syntax errors. In addition, Dreamweaver displays an alert message in the Info bar to inform you the first error line number and warn you that code hinting might not work property. It's important to know that even though all errors are shown, often only the first error is the real error location. The rest of the errors are an indirect consequence of the first error.
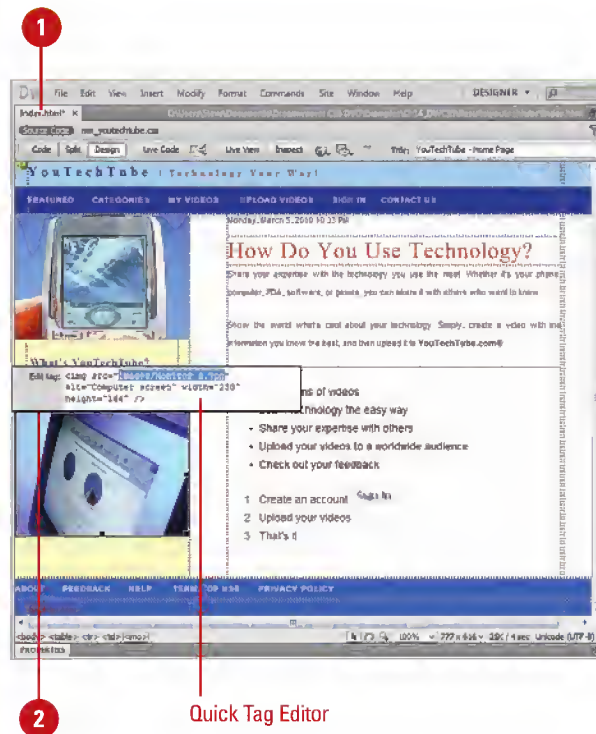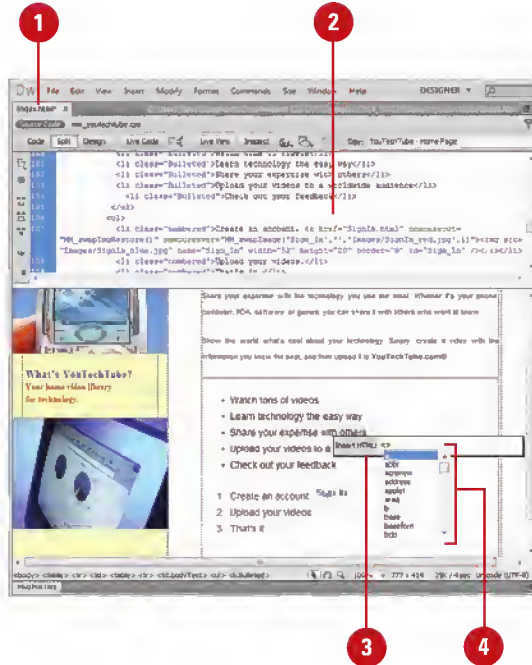
Using Quick Tag Editor

Creating Web documents in the Design view is a beautiful and elegant way to design Web pages; however, sometimes you just need to get under the hood and make changes directly to the code. Dreamweaver gives you a way to make alterations to the code using the Quick Tag Editor. When activated, the Quick Tag Editor displays as a small pop-up window and allows you to edit a tag, add a tag, or enclose the current selection within a tag. In addition, you can use a list of tags and attributes to help jog your HTML memory, and save you some typing. Dreamweaver's Quick Tag Editor can be used in three ways: Insert HTML (used for adding new tags and code at the current cursor position), Wrap Tag (wrap one tag around one or more other tags and content) and Edit HTML (displays the entire selected tag with all the attributes). It is a great time-saver for making those small tweaks to the code of any Web document. While most designers will perform most of the creative process using the Design view, it's nice to know that you have a powerful tool like the Quick Tag Editor when you need to get back to coding basics.

Open the Quick Tag Editor

1. Open the Web page you want to view code.

2. Open the Quick Tag Editor using any of the following methods:

   ◆ Click the **Modify** menu, and then click **Quick Tag Editor**.

   ◆ Use the keyboard shortcut Ctrl+T (Win) or ⌘+T (Mac).

   ◆ Click the **Quick Tag Editor** icon in the Properties panel.

Did You Know?

Dreamweaver helps you with the syntax of the code. If you fail to add the quotation marks around a parameter's value, the Quick Tag Editor will do it for you. If you want to add more than one tag, you can use the right arrow key to move beyond the first set of braces in the Quick Tag Editor. Then, simply enter in a left brace and add the additional tag.
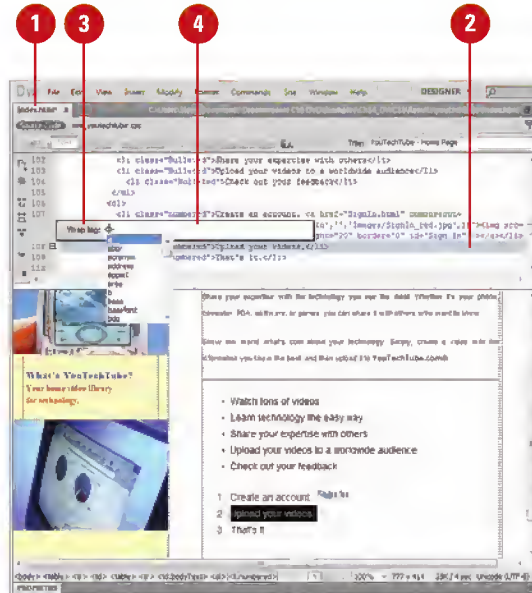

Quick Tag Editor

Use Quick Tag Editor in Wrap Tag or Insert HTML Mode

1 Open the Web page you want to view code.

2 Select a portion of text within the document (for Wrap Tag mode) or click in the text area (do not select any text) to place an insertion point (for Insert HTML mode).

3 Open the Quick Tag Editor.

4 Use the HTML tags in the pop-up hint list to insert a tag, or manually enter a customized XML tag.

5 Press Enter (Win) or Return (Mac) to wrap the selected text with the tag.

Use Quick Tag Editor in Edit Tag Mode

1 Open the Web page you want to view code.

2 Select a complete tag in Code view (e.g., img), or select an object, such as an image, in Design view.

3 Open the Quick Tag Editor.

The tag with all its attributes will be displayed within the Quick Tag Editor window.

4 Manually enter any changes to the tag and attributes.

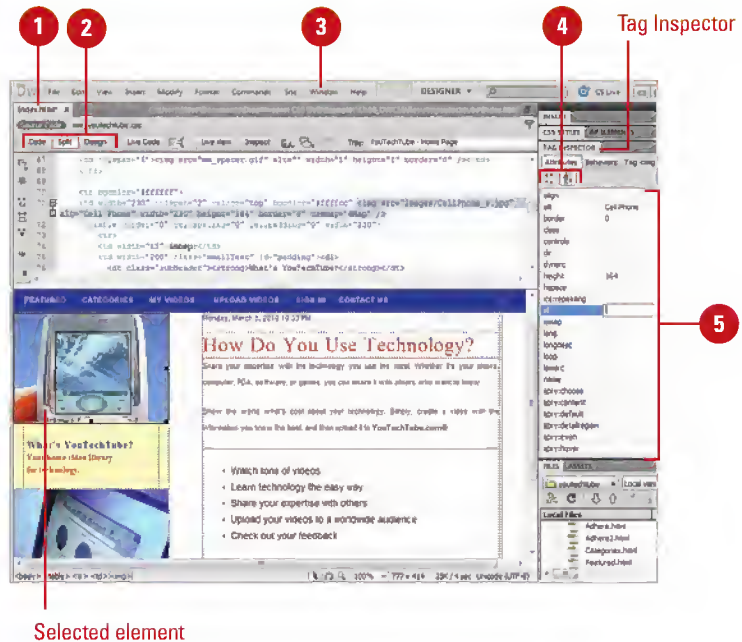**5** Press Enter (Win) or Return (Mac) to add the tag to the document.

Using the Tag Inspector

Dreamweaver's Tag Inspector gives you control over your code by displaying a collapsible outline of the tags used on the current page. This feature allow you to quickly determine if tags are correctly nested, and to view and change tag attributes. For example, you may want to change the attributes of the <body> tag, or change the overall color and size of the default font; both these and many more options are available using the Tag Inspector. When selected, the Tag Inspector displays a collapsible structure of all the attributes within the selected Web element. This view gives you an overall view of the code and how it's laid out. When you select a tag, all the attributes for that tag are displayed for you to view and edit.

Access the Tag Inspector

1 Open the Web page you want to view in the Tag Inspector.

2 Make a selection using one of the following methods:

◆ **Code View**. Select a specific HTML tag or section of text.

◆ **Split View**. Select a HTML tag in the Code pane or select an object in the Design pane.

◆ **Design View**. Select an object in the window, or create a selection of text.

3 Click the **Window** menu, and then click **Tag Inspector** to display the Tag Inspector.

4 Select from the following views:

◆ **Category View**. Displays a list of general categories within collapsible headings. Click the plus (+) or minus (-) sign icon to display all available attributes.

◆ **List View**. Displays a list of all available attributes for the selected Web element.

5 Select the attribute that you want to add or modify, and enter the correct value in the input field.

5 Press the Enter key to record your changes.

Tag Inspector

Selected element

Using the Tag Chooser

The Tag Chooser allows you to insert any tag from the Dreamweaver tag libraries in your page. A tag library is a collection of tags for a certain type that contains tag information, code hints, target browser checks, and other features. You can insert tags from the following types: HTML, CFML, ASP.NET, JSP, JRun custom library, ASP, PHP, and WML. If you are looking for a specific tag in a specific category, the Tag Chooser can help you insert it into your code with the right syntax.
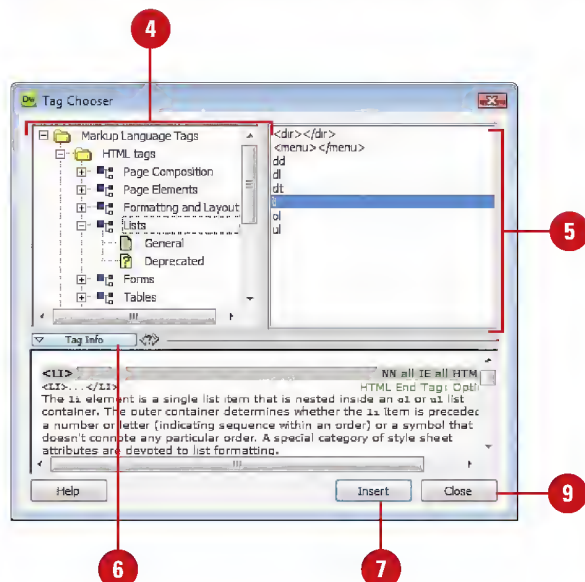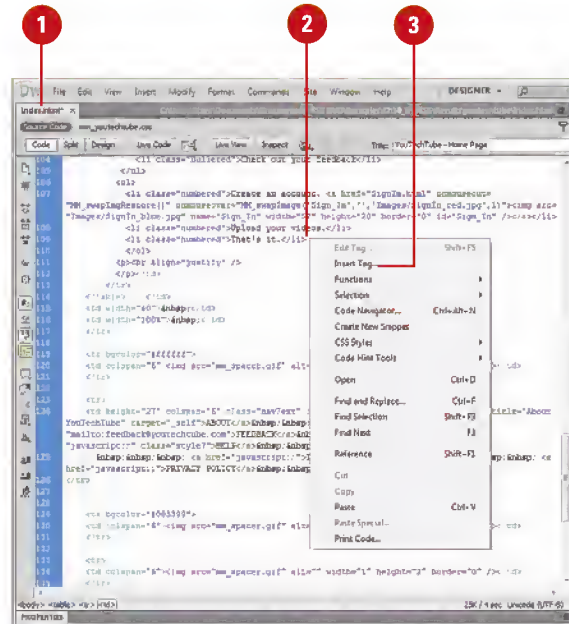
Insert Tags Using the Tag Chooser

1. Open the Web page you want to insert a tag using the Tag Chooser.

2. Click to place the insertion point in the code where you want to insert a tag.

3. Right-click (Win) or control-click (Mac) near the insertion point, and then click **Insert Tag**.

4. Select a category of tags from the tag library, or expand the category and select a subcategory.

5. Select a tag from the right pane.

6. To view syntax and usage information for the selected tag, click **Tag Info**.

7. To insert the selected tag into your code, click **Insert**.

8. If a tag requires more information, enter the required information in the tag editor, and then click **OK**.
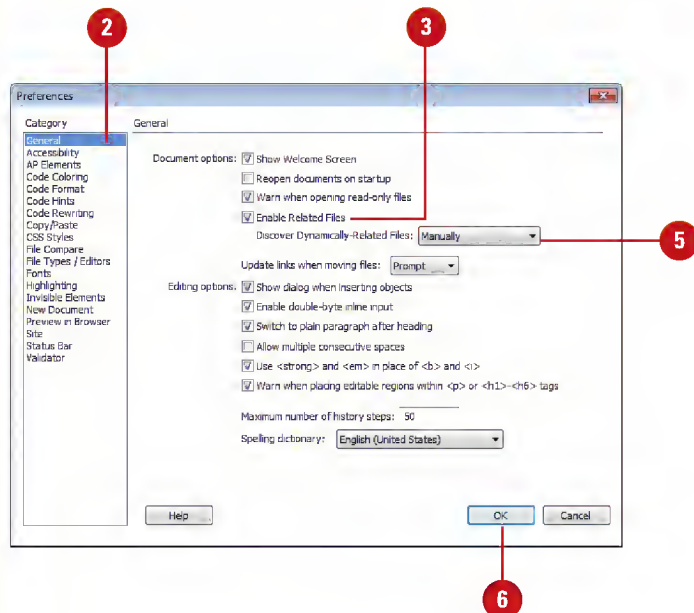
9. Click **Close**.

Opening Related Files

If you have a related file attached to a document, you can use the Related Files toolbar to quickly open it while keeping the main page available. When the Enabled Related Files option and an Discover Dynamically-Related Files option is selected in General Preferences, Dreamweaver displays the names of all static and dynamically (**New!**) related files related to a main document in a Related Files toolbar. The related files include external CSS rules, server-side includes (multi-level), PHP files, external JavaScript files, parent templates files, library files, and iframe source files. Status files appear first starting from the left, followed by external files (such as .css and .js), and concluding with dynamic path server included files (such as .php, .inc, and .mod-ule). When the Related Files toolbar contains too many files to fit on the toolbar, scroll arrows appear on the right and left to access files. To help you reduce the number of files on the toolbar, you can filter files by type to hide the ones you don't want to display. In addition, when you click a link to a code source file in the Code Navigator, the file appears in the related files area (if enabled).

Set Related Files Preferences

1 Click the **Dreamweaver** (Mac) or **Edit** (Win) menu, and then click **Preferences**.

2 Click the **General** category.

3 Select the **Enable Related Files** check box.

4 Click **OK** to the alert. The change takes effect after restarting Dreamweaver.

5 Click the **Discover Dynamically-Related Files** list arrow (**New!**), and then select an option:

◆ **Automatically.** Displays static and dynamically-related files on the Related Files toolbar.

◆ **Manually.** Displays static related files and displays the Info bar for dynamic-related ones. Click the **Discover** link on the Info bar to display it on the Related Files toolbar.

◆ **Disabled.** Turns off the discovery of dynamically-related files. Static related files are still displayed.
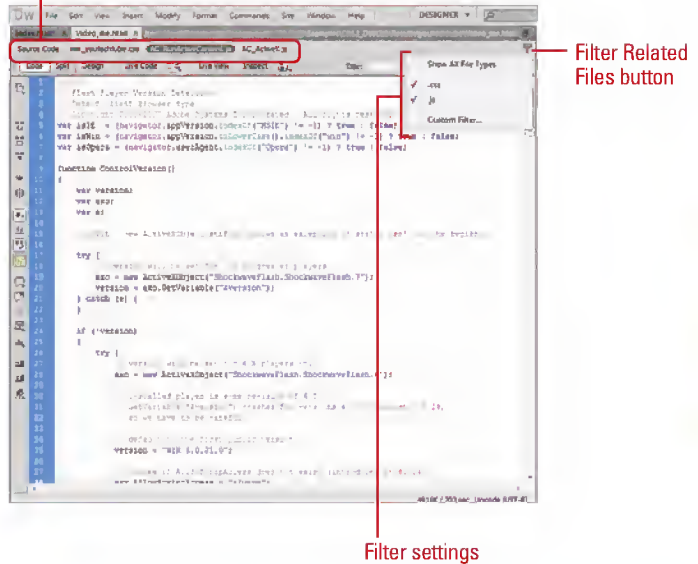
5 Click **OK**.

Use the Related Files Toolbar

◆ **Open a Related File.** Click a file named button on the Related Files toolbar.

◆ **Open a Related File as a Separate File.** Right-click (Win) or Control-click (Mac) a file named button on the Related Files toolbar, and then click **Open as Separate File**.

◆ **Return to the Main Document Source Code.** Click the **Source Code** button on the Related Files toolbar.

◆ **Filter Files on the Toolbar.** Click the **Filter Related Files** button (**New!**) on the Related Files toolbar, and then select the file types you want to filter (checked to show or unchecked to hide) or click **Show All File Types** to show all files.

The list of file types on the menu is built based on the file types connected to the current open document. You cannot filter out all the file types. When you close a document, the filter settings are not saved.

Related Files toolbar with buttons to access files

Filter Related Files button

Filter settings

For Your Information

Using the Info Bar

The Info bar is a yellow bar that appears across the top of the main document window, below the Document toolbar when certain types of errors occurs in Dreamweaver. The Info bar (**New!**) shows information error messages for dynamically-related files, Live View, standard related files, code hinting, etc. For example, if a related file doesn't exist locally, the Info bar displays a Get link to download the file, or if a related file isn't checked out by you, the Info bar displays a Checkout link to check out the files. Multiple Info bar messages can be displayed. Clicking the scroll arrows takes you to the next Info bar message. In Code view, the Info bar displays error messages in the current document. If you don't way to view the errors, you can turn them off by using the Syntax Error Alerts In Info Bar button on the Coding toolbar.

Navigating to Related Code

Code Navigator displays a list of linked code sources related to a part of a page. The related codes sources include internal and external CSS rules, server-side includes, external JavaScript files, parent templates files, library files, and iframe source files. When you click a linked code source, the file appears in the related files area (if enabled) or opens as a separate file in the Document window. If the code source is an internal CSS rule, the rule appears in Split view. You can open Code Navigator from Design, Code, and Split views and the Code Inspector.

Open the Code Navigator

1 Open the Web page you want to view.

2 Alt-click (Win) or command-option-click (Mac) anywhere on the page.

◆ You can also click the **Code Navigator indicator** icon to open the Code Navigator. The Code Navigator indicator icon appears near the insertion point when the mouse remains idle for 2 seconds.
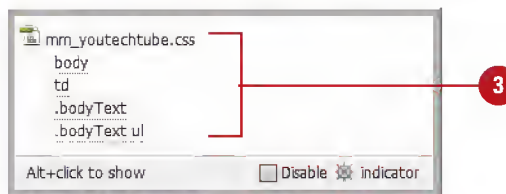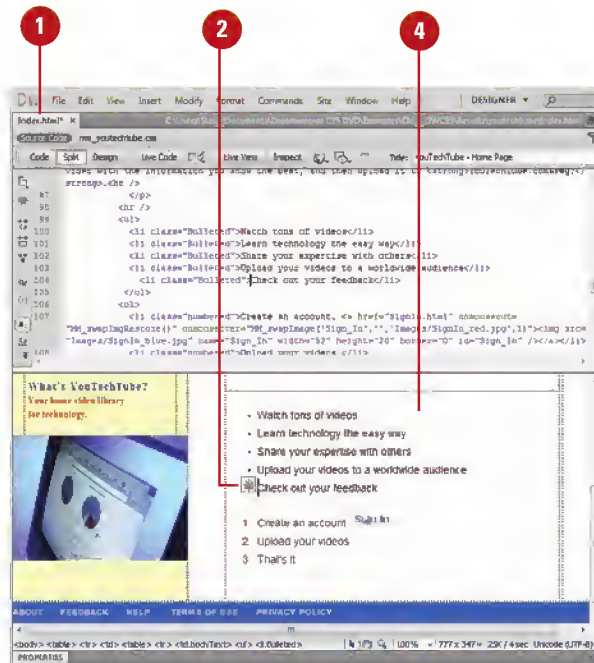
The Code Navigator displays links to the code related to the section of the page you clicked. The code sources are grouped by file and listed alphabetically.

3 Click a link to display it in the related files area or open it as a separate file in the Document window.

4 To close the Code Navigator, click outside of it.

Did You Know?

You can enable or disable the Code Navigator indicator. Alt-click (Win) or command-option-click (Mac) on a page, select or clear the Disable Indicator check box, and then click outside to close the Code Navigator.
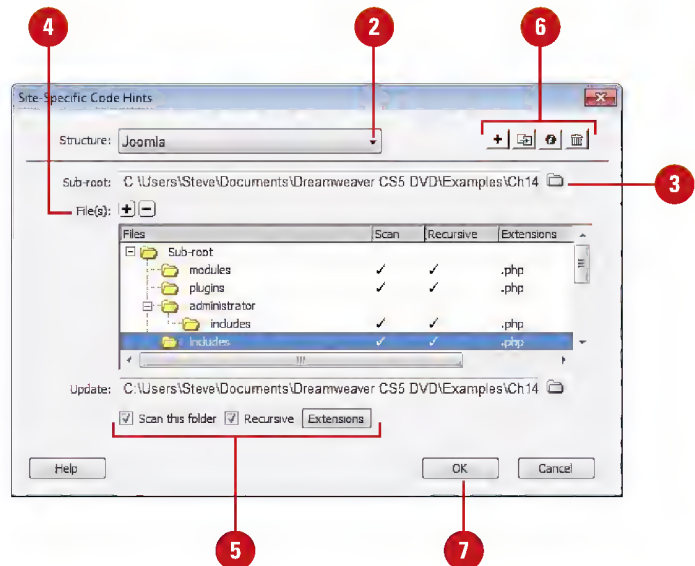
Setting Site Specific Code Hints

When you're working with PHP files in Dreamweaver, you can discover code hints for functions, variables, and classes (**New!**). The built-in hint support also includes tooltips with documentation from php.net, which you can enable in Code Hints preferences. Added dynamic PHP code hinting support allows you to customize CMS (Content Management System) frameworks, like Drupal, Wordpress, and Joomla. If a PHP code hint is not available by default in Dreamweaver, you can create or edit a configuration file in your local site with the site-specific code hints extension (**New!**) that allows PHP code hinting to inspect the specified files and folders for functions, objects, and global variables you want as code hints. The configuration file, named *dw_php_codehinting.config*, is saved to your site's root.

Set Site Specific Code Hints

1. Open a PHP page, and make sure a server site is set up.

2. Click the **Structure** list arrow, and then select a built-in option (**Drupal**, **Joomla**, or **Wordpress**), or click **<New from blank>** to create your own.

3. Click the **Browse for Folder** icon to select a sub-root folder for the configuration file and the base for searches within the site.

4. To add or remove a file or folder to your site scan, click the **Plus** button, specify a file or folder, and then click **Add**, or select a file or folder, and then click the **Minus** button.

5. Use any of the following:

   ◆ **Scan This Folder.** Includes the selected folder in the site scan.

   ◆ **Recursive.** Includes subfolders when a folder is selected.

   ◆ **Extensions.** Specifies the file extensions to check.

5. To manage structures, use the **Import**, **Save**, **Rename**, or **Delete** buttons.
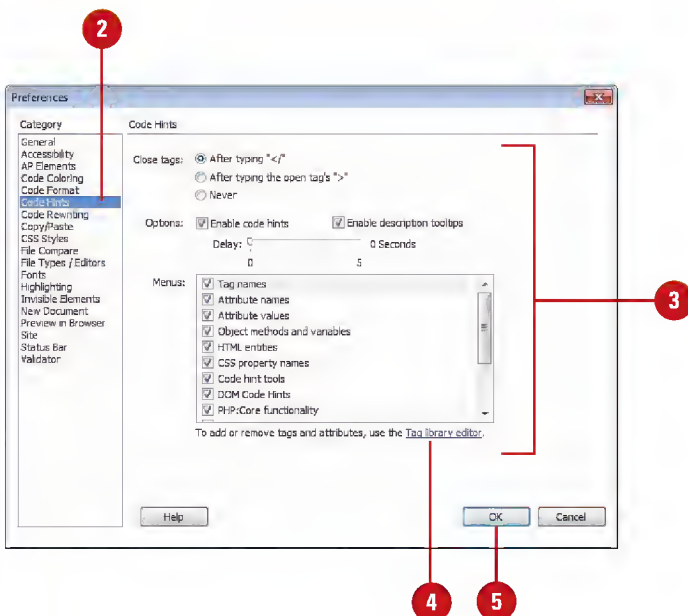
7. Click **OK**.

Setting Code Hint Preferences

You can use the Code Hint section of the Preferences dialog box to set options for the Code Hints popup menu. Code Hints does more than help you type in a simple HTML code tag. It helps you insert tag names, attributes, and values as you type code in Code view or the Quick Tag Editor. For example, when a tag requires the selection of a color, Dreamweaver displays a color palette. When a font is required, a font list is displayed, and when a file is required, a browse button magically appears allowing you to select and insert the file. If you want additional tooltip help, you can enable it for php code hints (**New!**).

Set Code Hint Preferences

1. Click the **Dreamweaver** (Mac) or **Edit** (Win) menu, and then click **Preferences**.

2. Click the **Code Hints** category.

3. Select from the following check boxes:

   ◆ **Close Tags.** Select an option to specify how you want to insert closing tags. The default inserts tags automatically after you type the characters </. You can also insert it after a final bracket >, or not at all.

   ◆ **Options.** Select the **Enable Code Hints** check box to use code hints, and then drag the slider to set the code hints popup menu delay you want. Select the **Enable Description Tooltips** check box (**New!**) to use tooltip help for PHP files.

   ◆ **Menus.** Select the check boxes for the types of code hints you want to display, and clear the others you don't want.

   IMPORTANT *Even if you disable code hints, you can display a popup hint in Code view by pressing Control+Spacebar.*

4. To add or remove tags and attributes, click the **Tag Library Editor** link.

5. Click **OK**.

Setting Code Format Preferences

You can use the Code Format section of the Preferences dialog box to change the way your code looks in Code view. The options you set in the Code Format section, except the Override Case Of option, are automatically applied only to new documents or additions to documents you create in the future. If you want to reformat an existing document, you can use the Apply Source Formatting on the Commands menu.
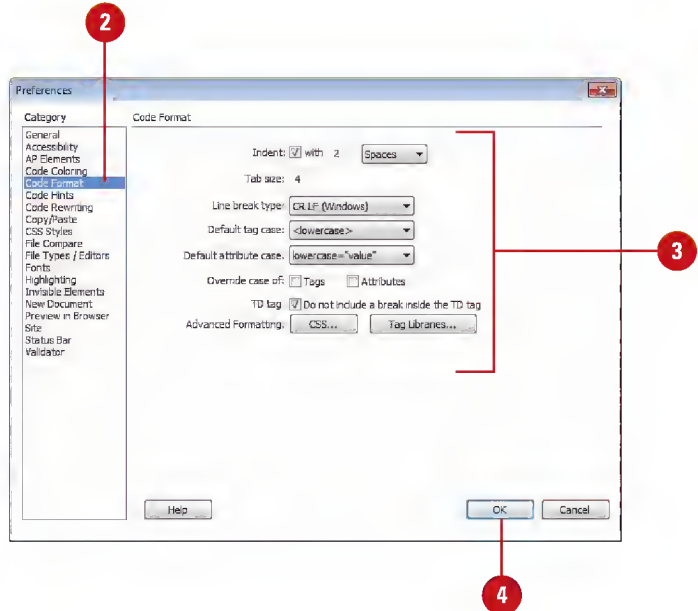
Set Code Format Preferences

1. Click the **Dreamweaver** (Mac) or **Edit** (Win) menu, and then click **Preferences**.

2. Click the **Code Format** category.

3. Select from the following options:

   ◆ **Indent.** Select to have Dreamweaver indent generated code, and then specify how many spaces or tabs to indent.

   ◆ **Tab Size.** Specify how many spaces for a tab character.

   ◆ **Line Break Type.** Select the type of remote hosting server (Windows, Macintosh, or UNIX).

   ◆ **Default Tag Case and Default Attribute Case.** Select <lowercase> or <uppercase>.

   ◆ **Override Case Of: Tags and Attributes.** Select whether to override your case settings.

   ◆ **TD Tag: Do Not Include A Break Inside The TD Tag.** Select to prevent problems with white space and line breaks on older browsers.

   ◆ **Advanced Formatting.** Click to set formatting options for CSS code and individual tags and attributes in the Tag Library Editor.

4. Click **OK**.

Setting Code Rewriting Preferences

You can use the Code Rewriting section of the Preferences dialog box to specify how and if Dreamweaver changes your code. Some of the rewriting options allow you to fix invalid nesting and unclosed tags; prevent duplicate names for form objects; ensure attributes values and URLs contain legal characters; and add the right JavaScript tags upon opening active content files. These options have no effect when you edit your code in Code view. If you disable the rewriting options, invalid HTML code that would have been rewritten is displayed in the Document window.

Set Code Rewriting Preferences

1. Click the **Dreamweaver** (Mac) or **Edit** (Win) menu, and then click **Preferences**.

2. Click the **Code Rewriting** category.

3. Select from the following options:

   ◆ **Fix Invalidly Nested and Unclosed Tags.** Select to rewrite overlapping or transposed tags and inserts closing quotation marks and to insert closing brackets as needed.

   ◆ **Rename Form Items When Pasting.** Select to prevent duplicate names for form objects.

   ◆ **Remove Extra Closing Tags.** Select to delete closing tags that don't have an associated opening tag.

   ◆ **Warn When Fixing Or Removing Tags.** Select to display a summary of invalid HTML code Dreamweaver wants to fix.

   ◆ **Never Rewrite Code: In Files With Extensions.** Select to prevent code rewriting in files with specific file extensions, and then specify the files extensions you want separated by a space.
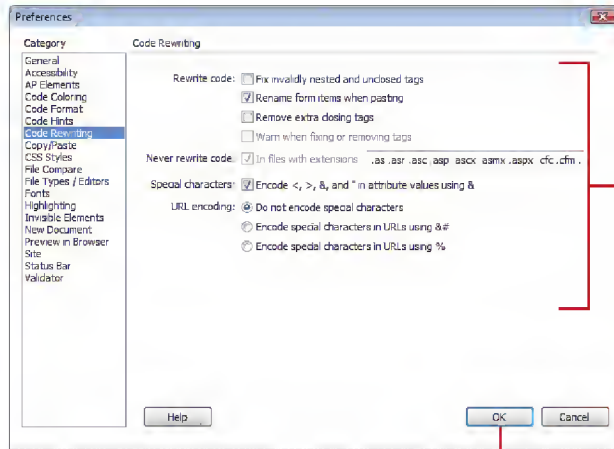
◆ **Encode <, >, &, And " In Attribute Values Using &.** Select to make sure attribute values you enter outside Code view contain legal characters.

◆ **Do Not Encode Special Characters.** Select to prevent Dreamweaver from changing URLs to use only legal characters.

◆ **Encode Special Characters In URLs Using &#.** Select to make sure URLs you enter outside Code view contain legal characters (use the &# encoding method).

◆ **Encode Special Characters In URLs Using %.** Select to make sure URLs you enter outside Code view contain legal characters (use the % encoding method).

④ Click **OK**.
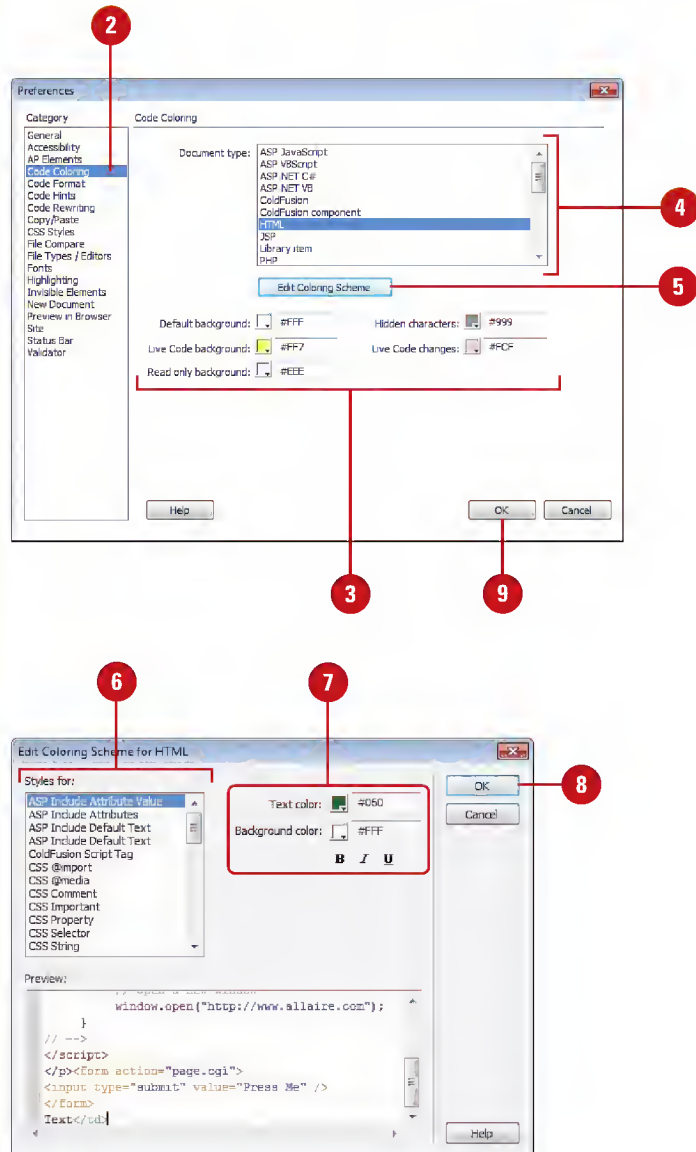
Setting Code Color Preferences

You can use the Code Coloring section of the Preferences dialog box to specify colors for general categories of tags and code elements, such as HTML Image or style tags, Library items, or CSS properties. For a selected tag or code element, you can specify the text color, background color, and any formatting (Bold, Italic, or Underline) you want to make it easier to work with your code. In Code view and Live Code view (**New!**), you can specify different colors for backgrounds and code to make it easier to read.

Set Code Color Preferences

1 Click the **Dreamweaver** (Mac) or **Edit** (Win) menu, and then click **Preferences**.

2 Click the **Code Coloring** category.

3 Click any of the color boxes, and then select a color.

- ◆ **Default Background.** Default Code view background color.

- ◆ **Hidden Characters.** Hidden character code color. (**New!**)

- ◆ **Live Code Background.** Live Code view background color. (**New!**)

- ◆ **Live Code Changes.** Live Code view code change color. (**New!**)

- ◆ **Read Only Background.** Read only background color. (**New!**)

4 Click the document type in which you want to set code colors.

5 Click **Edit Coloring Scheme**.

6 Select the style for the document type you want to change.

7 Specify the text color, background color, and any formatting (Bold, Italic, or Underline) you want.

The sample code in the Preview pane displays the new styles and colors.

8 Click **OK**.

9 Click **OK**.

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Developing iPhone Apps

16

Introduction

Apple has this device called an iPhone. Have your heard of it? Of course you have. There is even a good chance you have an iPhone. While the iPhone itself is an amazing piece of technology, it is the software that makes the iPhone really great.

The challenge in developing applications for the iPhone is that you need to know how to develop using Apple's Cocoa Touch framework and the programming language Objective C. One of the most interesting and talked about features in Flash CS5 is Adobe's inclusion of a tool that converts your Flash movies to files that will run on any iPhone OS device without needing to know Objective C. You just need to apply the Flash and ActionScript knowledge you already have. A new tool in Flash CS5, called the iPhone Packager, converts files into valid iPhone applications.

Before you can create an iPhone App there are several activities you need to complete so you can develop in Flash CS5. They are (1) Become a Certified Apple Developer, (2) Create a Development and Developer P12 certificate, and (3) Register your development iPhone with Apple.

In this chapter, you'll get an overview for how to start developing for the iPhone using Flash CS5 including deploying an App to the iTunes App Store.

What You'll Do

Become an Apple Certified Developer

Register an iPhone and other Apple Testing Devices

Create App's ID

Create a Developer's Provisioning Profiles

Create and Publish an iPhone App

Control the Accelerometer

Save Images to the Camera Roll

Understand the Limitations of Flash

Identify Devices to Deploy an Ad Hoc App

Create an Ad Hoc Distribution Profile

Package an Ad Hoc App

Use iTunes Connect to Publish an App

Use Screen Orientation in an App

Use Geolocation in an App

Use Multitouch in an App

Becoming an Apple Certified Developer

The iPhone OS has rapidly become the mobile operating systems against which all other mobile systems, such as Android, Windows Mobile 7, BlackBerry, WebOS and Symbian, are all compared to. There is a very good reason for this: the iPhone OS is rock solid. Each App you develop for the iPhone OS will run on an ever increasing number of products shipping from Apple. They include the iPhone 3G and 3GS, iPod Touch and the iPad. All of your Flash CS5 applications (**New!**) will run on these devices. To be able to develop applications for the iPhone you do need to become a registered Apple developer. The cost is only $99 a year and this gives you the ability to load applications up to the iTunes App Store. Yes, you heard me right; it only costs $99 a year to load as many apps as you can develop into the iTunes App Store. This is an amazing deal. Similar programs run by Nintendo to develop apps for their Wii Wares store start in the low thousands of dollars.

Become an Apple Certified Developer

1. Open your Web browser on the Mac, and then go to the iPhone Dev Center site:

    ◆ *http://developer.apple.com /iphone*

    IMPORTANT *Use a Mac for these steps. later work can be done on a Windows computer.*

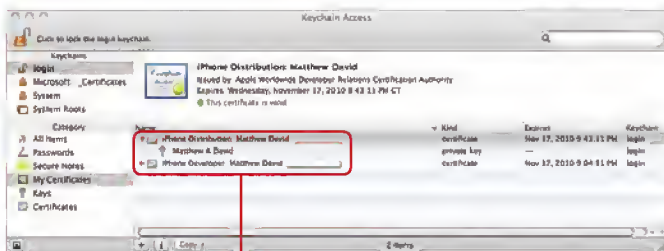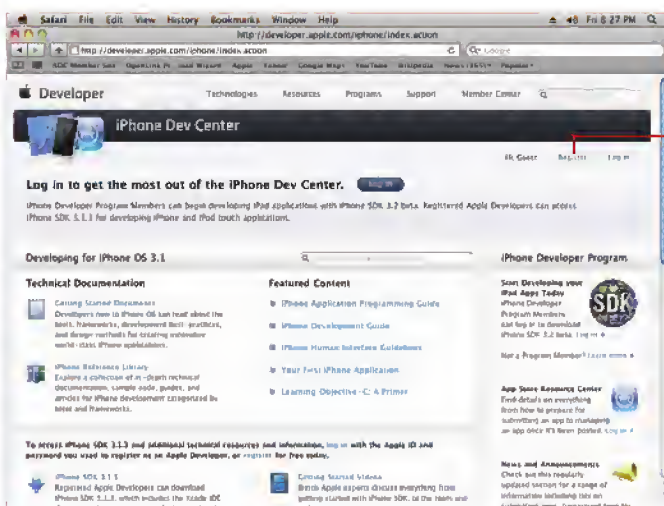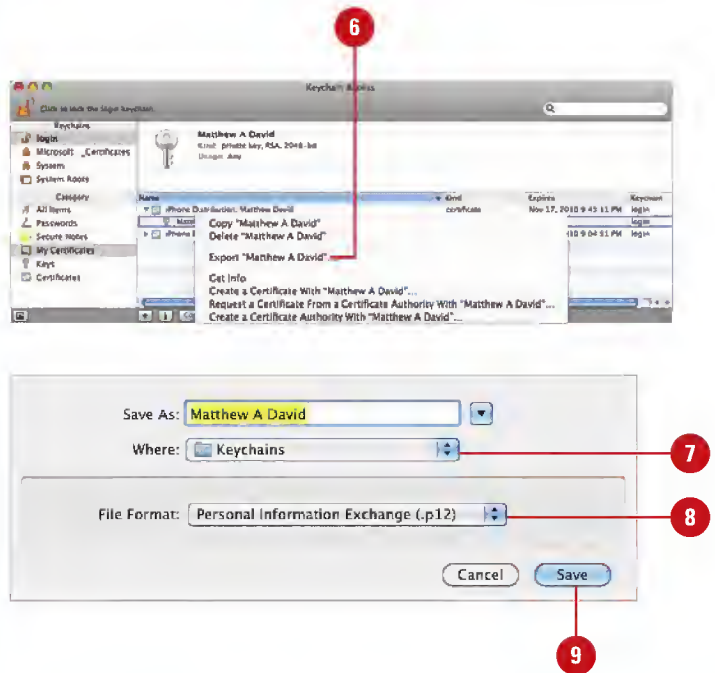2. Click the **Register** link on the Web page.

3. Follow the registration process; either use an existing iTunes Account or create a new account to register with the site.

    ◆ Upon completion, you'll receive an email confirmation.

4. Go to *http://developer.apple.com /iphone/manage/certificates* to download and install your Apple iPhone Development Certificate.

5. Open the Keychain to view your Apple iPhone Development Certificates: a Developer and a Distribution Certificate.

8 Control-click on the Developer Certificate, and then click **Export Certificate**.

7 Navigate to the location where you want to save the certificate.

8 Click the **File Format** list arrow, and then click **Personal Information Exchange (.p12)**.

8 Click **Save**.

10 Enter a strong password for your App, and then remember it as you'll need it later.

11 Repeat Steps 6-10 to export the Distribution Certificate in the Personal Information Exchange (.p12) format.

Did You Know?

You can use the P12 Certificates on Windows. You can copy the P12 Developer and Distribution Certificates to a disc and use them on a Windows computer. Creating the P12 Personal Information Exchange Certificates can be done on a Windows computer, but it requires the use of third party software such as OpenSLL. It is not easy. You are much better off starting with a Mac (find a friend, if you need to) and then moving to a Windows computer for your future Flash CS5 iPhone development needs.

For Your Information

Developing Apps on Macs and Windows

Amazingly, Adobe is the only company that allows you to develop iPhone Apps on Windows. All you need to accomplish this is to use a P12 Developer and Publishing certificate. The easiest way to get a P12 certificate is from a Mac computer. Just ask a friend if you can create an account on their Mac and then register yourself with Apple's Development program and create your own P12. After that you can copy the P12 certificate onto your Windows machine and develop the iPhone Apps.

Registering an iPhone and Other Apple Testing Devices

The hardest part of developing apps for the iPhone is not the code you develop, but ensuring you have all of your i's and t's dotted and crossed per Apple's rigorous registration process. One small step in the wrong direction and your App will not compile or install correctly. It is worth taking your time to go through the setup process (**New!**). After you have your P12 Certificates you will need to register your test iPhone with Apple. You can register up to 100 devices per year. The developer account ID, registered device and P12 certificates are needed for all apps your want to sell in the iTunes App Store. You can register iPhone's, iPod Touches and iPads.

Find your iPhone's Unique Identifier

1. Connect your test iPhone/iPod Touch to your computer.

2. Open iTunes, and then select your device from the list to view the Summary tab information.
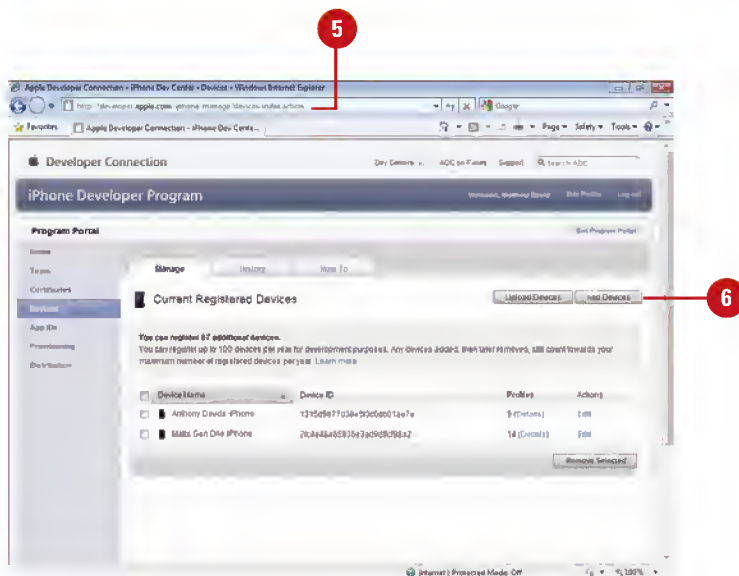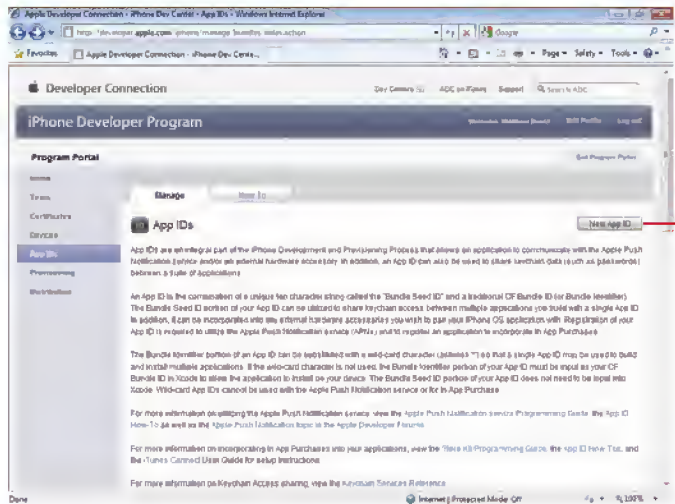
3. Click the Serial Number next to your device.

   The number changes to an Identifier (UDID) number, which is. about 40 alpha-numeric characters long.

4. Copy the UDID number.

5. Open your Web browser, and then go to the Devices page on the iPhone Developer site:

   ◆ http://developer.apple.com /iphone/manage/devices /index.action

5. Click the **Add Devices** button.

7. Paste in the UDID number and then enter a name for your device.

   ◆ Suggestion: you may want to choose something like "iPhone Development" or "iPod Touch Gen 3 Development."

Creating App ID's

The App ID is a unique identifier Apple uses to identify your App from the tens of thousands of Apps in the iTunes App Store. There are ten's of thousands of applications in the iTunes App Store with more in constant development. Part of your registration process is to assign your App an ID, called the App ID. The App ID (**New!**) will be connected to your certificate and to the development and publication profiles you generate. You control the name of the App, but behind the scenes, Apple associates it an unique ID, called a Bundle Seed ID. Apple will know what your App is when it comes time for you to submit your App to iTunes.

Create an App ID

1 Open your Web browser, and then go to the App ID page on the iPhone Developer site:

  ◆ *http://developer.apple.com /iphone/manage/bundles /index.action*

2 Click the **New App ID** button.

3 Enter a new App name you can find easily, such as *WorldlyWordSearch*; the name has to be all one word.

4 Enter a Bundle Seed ID.

  ◆ The convention is to reverse your Web site address and add your Apps name at the end. For example, *com.pearson. worldlywordsearch*; the name has to be all one word.

5 Click **OK**.

Creating a Developers Provisioning Profiles

A provision profile is a document which is associated with your App and developer certificate for either development or iTunes App distribution. There are three types of Provisioning Profiles (**New!**) you can use: Developer, Distribution to Ad Hoc and Distribution to iTunes App Store. You will cover how to use the Distribution Profiles later in the chapter. For now, let's focus on creating Developer Profiles.
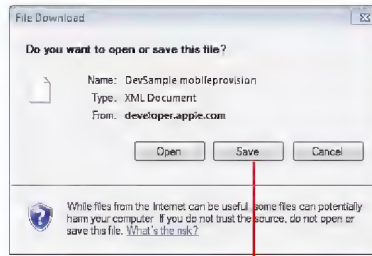
Create a Developer Profile

1 Open your Web browser, and then go to the Provisioning Profiles page on the iPhone Developer site:

  ◆ http://developer.apple.com /iphone/manage/provisioningpr ofiles/index.action

2 Click the **Development** tab.

3 Click the **New Profile** button.

4 Enter a meaningful Profile name.

A convention that is gaining popularity is to use the prefix "Dev" followed by the App ID, such as *DevWorldlyWordSearch*.

5 Select the check box with your name in the Certificates list.

6 Click the **App ID** list arrow, and then select your App ID.

7 Select your test device from the devices listed.

8 Click the **Submit** button.

Your developer profile takes about 30 seconds to generate.

9 Click **Download** (Mac) or **Save** (Win), and then save the Developer profile to your desktop.

The file will have the extension "mobileprovision"

10 Connect your test iPhone to iTunes.

11 Drag the downloaded Developer Profile onto iTunes, and then sync your iPhone.

This adds the Developer Profile to your testing device.

9

For Your Information

Developing Icons for your iPhone Apps

In preparation for your iPhone App there are four PNG images you need:

29.png – a file that is 29x29 pixels

57.png – a file that is 57x57 pixels

512.png – a file that is 512x512 pixels

Default.png – this place holder file that is used while your App is loading. It is important the file starts with a capital "D".

You can create all of these files using Adobe Fireworks.

Creating and Publishing an iPhone App

With all of these tasks completed you are now ready to complete your first iPhone App. Sometimes it seems like a world full of red tape where you need to dot your i's and cross your t's, but you do get to the point where you can develop applications for your iPhone using Flash CS5 (**New!**). You need to go through the steps of creating a Developer Certificate, registering your test iPhone, creating an App ID, and downloading a developers profile in order to develop for any iPhone development tool; this is not just a unique Flash CS5 feature. Flash CS5, however, does allow you to very easily create the final iPhone App.

Create and Publish an iPhone App

1. In Flash, click the **File** menu, click **New**, click **iPhone OS**, and then click **OK**.

   A new movie opens with the size 320x480 pixels.

2. Create an iPhone App using Flash tools.

3. Open the **Properties** panel.

4. Click the iPhone Settings **Edit** button.

   The iPhone Settings dialog box opens, displaying three tabs: General, Deployment and Icons.

5. Click the **General** Tab.

6. Enter an Output file name, such as *wordsearch.ipa*.

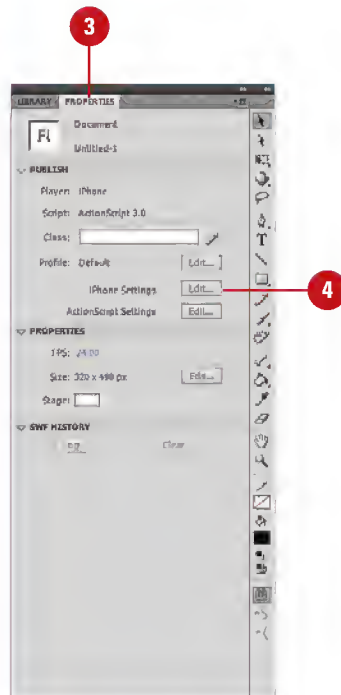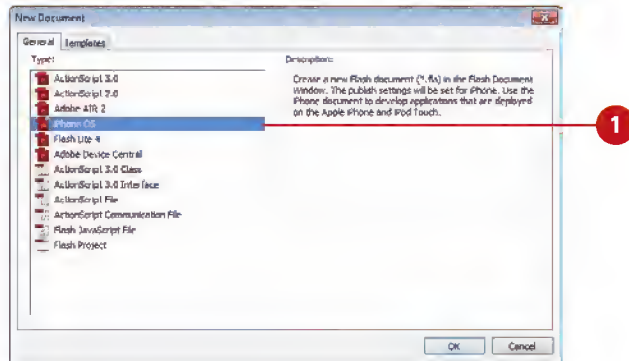7. Enter the App Name that you want to appear on the iPhone, such as *Word Search*. You are limited to 11 characters.

8. Enter an version number for the App, such as *1.0*.

9. Click the **Aspect Ratio** list arrow, and then select a display option: Portrait or Landscape view.

10. Select or deselect any of the following options:

    ◆ **Full Screen.** Select to force your App to take up all of the screen space on your phone;
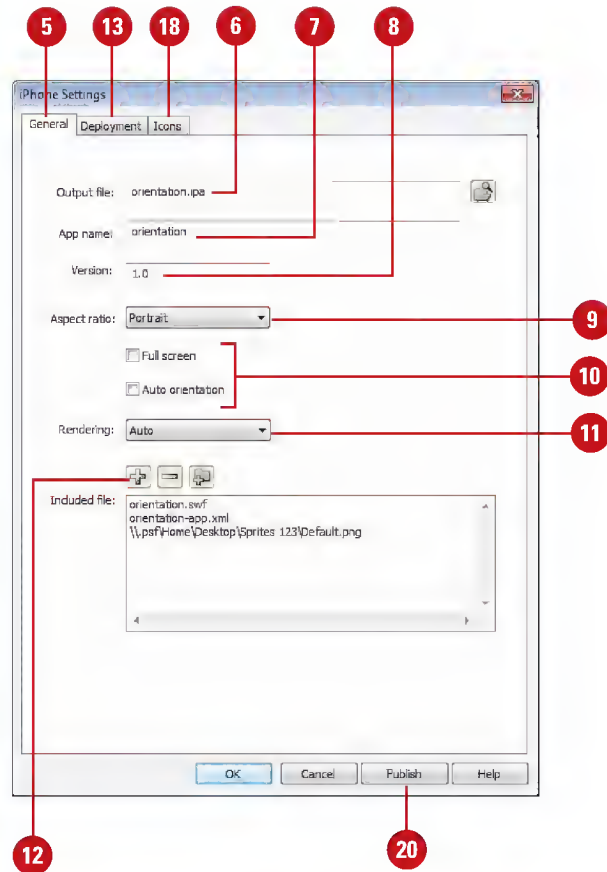
deselect to show information at the top of your iPhone, including carrier signal, WiFi connection, time and battery life, will be visible in your App.

◆ **Auto Orientation.** Select to change the orientation of your App as the iPhone is rotated.

11 Click the **Rendering** list arrow, and then click an acceleration option, **Auto**, **CPU**, or **GPU**.

12 Click the **Add** button (+) in Included Files, and then select the Default.png file. The Default.png file displays when your App starts to run and disappears when your App has loaded.

13 Click the **Deployment** tab.

14 Click **Browse**, and then select your Developer P12 certificate file, and then enter your password.

15 Click **Browse**, and then select the developer Provisioning Profile you downloaded.

18 Enter the full name of the App ID you created in the iPhone Developer Center.

17 Select the **Quick Publishing For Device Testing** option.

18 Click the **Icons** tab.

13 Locate and add the 29.png, 57.png and 512.png file.

20 Click **Publish**.

Flash launches the iPhone Packager tool and generates (6-10 minutes) an IPA iPhone App file in the same folder as your Flash files.

21 Locate the IPA file, and then drag the file onto iTunes and sync your device. When the sync completes you will be able to launch your App from your iPhone.

For Your Information

Playing Back Video

You can play back video in the iPhone, but there is a caveat. The only types of video that you can add to your iPhone Apps are Sorenson and ON2 VP6 video formats. If you want to use H.264 then you need to essentially post the video to a URL string so it pops up in Mobile Safari.

Controlling the Accelerometer

With the release of the Flash Player 10.1 and Adobe Integrated Runtime, AIR 2.0, the Flash team added several new core API features (**New!**). Access to a devices Accelerometer is one of those. The role of the Accelerometer is to detect when you move your phone. The Accelerometer is a listener that is triggered when it is used. The following example adds an Accelerometer listener to your iPhone App.

Add an Accelerometer Listener

1. Create a new iPhone App and add the necessary development properties in the iPhone settings.

2. Add a dynamic text field to the Stage with the name *myTextField* in the Properties panel.

3. Create a new layer on the Timeline with the named *Actions*, and then select the Actions layer.

4. Open the **Actions** panel.

5. Add code to import the libraries for the Accelerometer to work correctly:

   import flash.events.AccelerometerEvent

   import flash.sensors.Accelerometer;

6. Add code to create a new Accelerometer object:

   var acc1:Accelerometer = new Accelerometer()

7. Add a boolean object to test if the Accelerometer works or not:

   var isSupported:Boolean = Accelerometer.isSupported;

   checksupport();

8. Add a function that contains the event listener, which waits for the Accelerometer to be triggered:

   function checksupport():void {

    if (isSupported) {

     myTextField.text = "Accelerometer feature supported";

   acc1.addEventListener (AccelerometerEvent.UPDATE, updateHandler);

   } else {

     myTextField.text = "howdy ";   }

   }

9. Add a function that posts a message to the text field to tell what direction the device has moved to:

   function updateHandler(evt:AccelerometerEvent):void {

   myTextField.text = String("at: " + evt.timestamp + "\n" + "acceleration X: " + evt.accelerationX + "\n" + "acceleration Y: " + evt.accelerationY + "\n" + "acceleration Z: " + evt.accelerationZ);

10. Publish and package your file into an iPhone App and test it on your iPhone.

The Accelerometer gives you new ways for your customers to interface with your applications beyond touchscreen controls. The Accelerometer works great on the iPhone but the same code can be used for Adobe AIR apps running on Google's Android OS, Palm's WebOS and RIM's BlackBerry phones. Yes, that's right. Develop one App and have it deployed to multiple mobile devices.

Saving Images to the Camera Roll

Adobe does give you access to some core iPhone specific tools. One of those is the ability to add a function that will save an image of the screen to the Camera Roll (**New!**). The following example saves a screen image to the Camera Roll in an iPhone App.

Save a Screen Image to Camera Roll

1 Click the **File** menu, click **New**, click **iPhone OS**, and then click **OK**.

2 Create a new Movie Clip on the Stage with the name *snapShot*.

3 Add the following event Listener to:

snapShot.addEventListener(MouseEvent.CLICK, myScreenShot);

4 Add the following function that takes a screen shot of your iPhone:

function myScreenShot
(event:MouseEvent):void

{

if (CameraRoll.supportsAddBitmapData)

{

var cameraRoll:CameraRoll = new CameraRoll();
cameraRoll.addEventListener(ErrorEvent.ERROR, onCrError);

cameraRoll.addEventListener(Event.COMPLETE, onCrComplete);

var bitmapData:BitmapData = new BitmapData(stage.stageWidth,stage.stageHeight);

bitmapData.draw(stage);

cameraRoll.addBitmapData(bitmapData);

}

else

{

trace("not supported.");
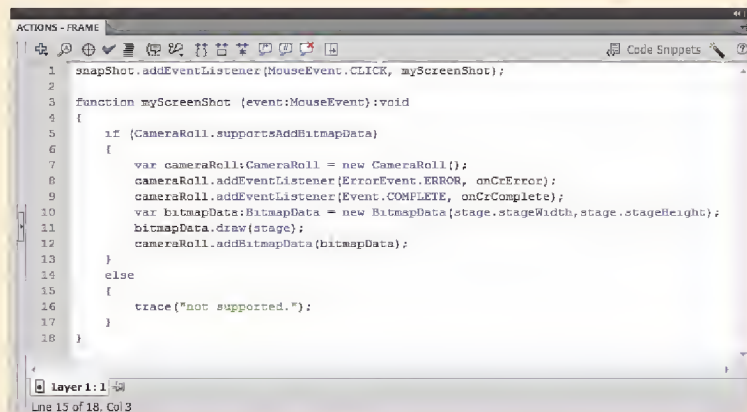
}

}

5 Publish and package your file into an iPhone App and test it on your iPhone.

Understanding the Limits of Flash

There are some limitations to using the iPhone Packager for Flash CS5 (**New!**). The first is that you cannot load external SWF movies. You can, however, load external JPG and PNG files and sound files such as MP3.

There are also performance problems between different versions of the iPhone. For instance, the iPhone 3GS is literally twice as fast as the iPhone 3G and original iPhone. There some simple tricks you can do to speed up things. The following code will prevent event Bubbles starting:

```
override public function
    dispatchEvent(evt:Event):Boolean {

if (hasEventListener(evt.type) || evt.bubbles) {

return super.dispatchEvent(evt);

}

return true;

}
```

A second optimization trick you can do is to restrict your use of vector based images inside of Flash. Use PNG formatted images where possible. The good news is that that the iPhone has great support for PNG files.

If you do need to use vector images you can fool the iPhone into thinking it's a bitmap image by using the cahceAsBitmapMatrix.

1. Create a new image. Add code import the Flash Geom Matrix:

   ```
   import flash.geom.Matrix;
   ```

2. Create a new shape:

   ```
   var my_shape :MyShape = new MyShape();
   addChild(my_shape);
   ```

3. Add the cachasBitmap property to ensure that all objects that create are cached:

   ```
   my_shape.cacheAsBitmap = true;
   my_shape.cacheAsBitmapMatrix = new Matrix();
   ```

4. Create images on the screen that the iPhone thinks are bitmaps.

A final significant limitation is the use of audio files. Audio files can have a short delay between an event happening and the sound playing. This is because the audio file is not in the iPhone's cache for playback. You can avoid this by exporting your audio file to be triggered in the first frame of your movie.

What Flash Does Not Allow You To Do

Adobe has gone to great lengths to allow you to build applications for the iPhone using traditional Flash tools. BUT (and it is a big BUT) there are some things that Flash does not allow you to do using the iPhone Packager.

The biggest challenge you will have is the inability to use ActionScript 1.0 and 2.0. All of your apps must be developed using ActionScript 3.0. There are tens of thousands of great ActionScript 1.0 and 2.0 apps that can not be published to the iPhone due to the ActionScript 3.0 limitation.

You also have to be careful using video. Only Flash Video will work. You can use a URL link to load a MPEG4 video, but this is really a cheat as you are running the video through the iPhone's Mobile Safari Web browser.

If you are familiar developing iPhone Apps using the iPhone SDK then you may expect core iPhone Cocoa Touch kits available to you in Flash. This includes the StoreKit (for "in App purchase"), GameKit, MapKit and other rich media tools. These useful kits are simply not available to the Flash developer.

The good news is that Adobe is well aware that the Flash CS5 iPhone Packager is not complete. Expect releases for the iPhone Packager to keep coming during the lifecycle of Flash CS5.

Identifying Devices to Deploy an Ad Hoc App

Ad Hoc is a method for deploying your App to up to 100 iPhone, iPod Touch and iPad devices. The Ad Hoc method (**New!**) is a solution that allows you to deploy your apps to a small group of friends and co-workers without the App appearing in the iTunes App Store. The method for creating the application is very similar to deploying an App for deployment to the iTunes App store. There are three steps you need to be able to successfully deploy an App using Ad Hoc: Identify each device you will be deploying your Ad Hoc App too; creating an Ad Hoc provisioning license; and packaging your Ad Hoc App.

Collect and Add Deployment Device IDs

1. Contact each person you will be deploying your App to and ask them to connect their iPhone, iPod Touch or iPad to their Mac or Windows computer.

2. Ask them to open iTunes, select their device, and then view the Summary tab information.

3. Ask them to click the Serial Number next to their device.

    The number changes to an Identifier (UDID) number.

4. Ask them to copy the UDID number, and then send it to you.

5. Open your Web browser, and then go to the Devices page on the iPhone Developer site:

    ◆ http://developer.apple.com /iphone/manage/devices /index.action

5. For each trusted device, click the **Add Devices** button on the Web page, paste in the UDID number and then enter a device name.

    IMPORTANT *You can only have 100 identified devices per year. You cannot add and remove devices to keep your list at 100. When you have added the 100th device you have to wait a year before you can remove a device and add a new one.*

Added trusted devices

Creating an Ad Hoc Distribution Profile

The first step is to identify the devices you will be deploying your Ad Hoc App to. The next step is to create the profile you will need to use when you are building your Application for Ad Hoc deployment. The Ad Hoc Distribution method (**New!**) removes the hassle of having to wait for your App to be approved by Apple (which can take days to weeks to complete). To be able to take advantage of the Ad Hoc deployment process you need to first create an Ad Hoc Distribution Profile. Creating the Ad Hoc Profile is very similar to the profile you will create when you submit your App to the iTunes Store. The one big difference is you need to have a list of all the unique iPhone's and iPod Touch devices you will be sending your final App too.

Create an Ad Hoc Distribution Profile

1 Open your Web browser, and then go to the Provisioning Profiles page on the iPhone Developer site:

   ◆ *http://developer.apple.com /iphone/manage/provisioningpr ofiles/index.action*

2 Click the **Distribution** tab.

3 Click the **New Profile** button.

4 Click the **Ad Hoc** option.

5 Enter a profile name for your App.

6 Click the **App ID** list arrow, and then select the App ID that matches the App you want to deploy using Ad Hoc.

7 Select the devices (from the list of ones you entered) you want to deploy using Ad Hoc.

8 Click the **Submit** button.

   Your Ad Hoc profile takes about 30 seconds to generate.

9 Click **Download** (Mac) or **Save** (Win), and then save the Ad Hoc profile to your desktop.

   At this point, you're ready to create your Ad Hoc iPhone App.

Packaging an Ad Hoc App

The final step you need to take is to package your Flash movie into an iPhone App using the Ad Hoc profile (**New!**). The final step in creating your Ad Hoc App is to package your Flash App for distribution. The Ad Hoc distribution process is very similar to the final App Store Packaging publication process. There are some differences. The main change is that you must use the Ad Hoc Profile you created in the previous section. Without the Ad Hoc Profile your Ad Hoc deployment method will not work correctly.
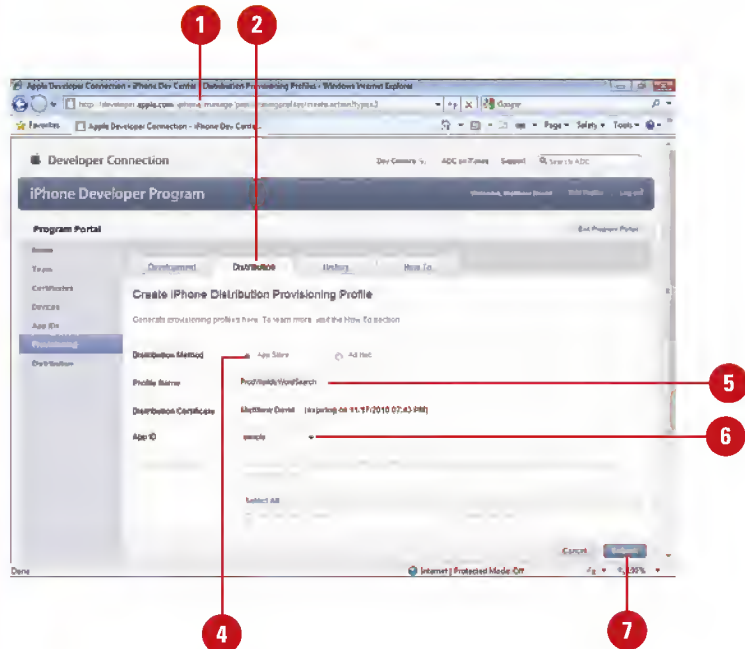
Publish and Package an Ad Hoc App

1 In Flash, open the iPhone App you want to publish and package as an Ad Hoc App.

2 Open the **Properties** panel.

3 Click the iPhone Settings **Edit** button.

The iPhone Settings dialog box opens, displaying three tabs: General, Deployment and Icons.

4 Click the **Deployment** tab.

5 Click **Browse**, and then select your Published P12 certificate file, and then enter your password.

6 Click **Browse**, and then select the Ad Hoc Distribution Profile you downloaded.

7 Click the **Deployment – Ad Hoc** option.

8 Click **Publish**.

Flash launches the iPhone Packager tool and generates (6-10 minutes) an IPA iPhone App file in the same folder as your Flash files.
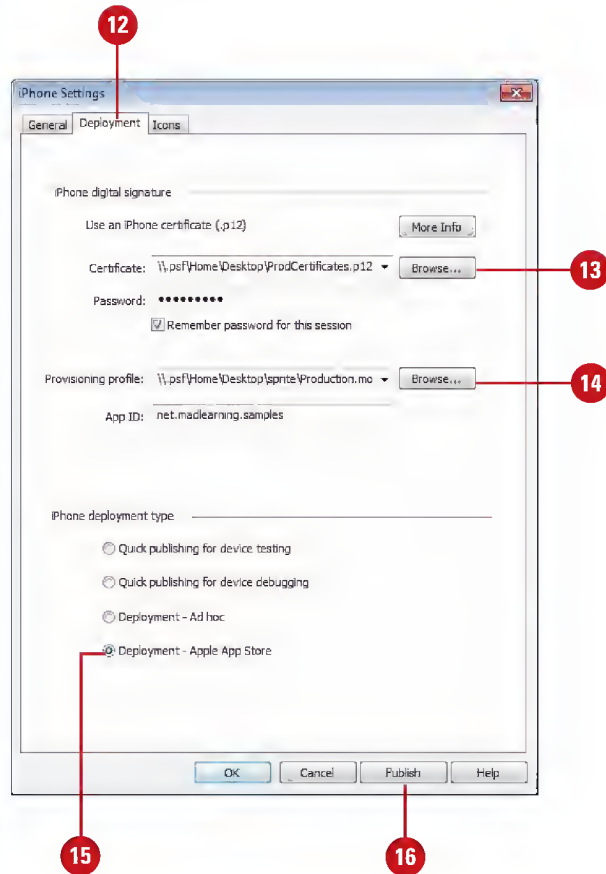
10 Locate the IPA file and send it to anyone in the Ad Hoc Provisioning Profile list. Ask them to drag the file onto iTunes and sync their device. When the sync completes you will be able to launch your App from your iPhone.

Packaging an App for the iTunes App Store

Apple's iTunes Store is an amazing success story. 133,000 Apps and 3 Billion downloads in 20 months is nothing to sneeze at. There are many stories of companies making millions from Apple. But, before you can get any money, you need to have your App ready for deployment. The method for packaging your Flash file into an iPhone App for distributing to the iTunes store is very similar to the Ad Hoc process with the exception that you only need to create a distributing profile and create your iPhone IPA file from Flash CS5 (**New!**).

Publish and Package an iPhone App

1 Open your Web browser, and then go to the Provisioning Profiles page on the iPhone Developer site:

- ◆ http://developer.apple.com /iphone/manage/provisioningpr ofiles/index.action

2 Click the **Distribution** tab.

3 Click the **New Profile** button.

4 Click the **App Store** option.

5 Enter a profile name for your App.

6 Click the **App ID** list arrow, and then select the App ID that matches the App you want to deploy.

7 Click the **Submit** button.

Your profile takes about 30 seconds to generate.

8 Click **Download** (Mac) or **Save** (Win), and then save the App Store profile to your desktop.

9 In Flash, open the iPhone App you want to publish and package as an App Store App.

10 Open the **Properties** Panel.

11 Click the iPhone Settings **Edit** button.

The iPhone Settings dialog box opens, displaying three tabs: General, Deployment and Icons.

12 Select the **Deployment** tab.

13 Click **Browse**, and then select your Published P12 certificate file, and then enter your password.

14 Click **Browse**, and then select the App Store Distribution Profile you downloaded.

15 Click the **Deployment – Apple App Store** option.

15 Click **Publish**.

Flash launches the iPhone Packager tool and generates (6-10 minutes) an IPA iPhone App file in the same folder as your Flash files.

17 Locate the IPA file and then change the extension of the file from IPA to ZIP.

Both file formats are container formats. That is, they contain all of the files needed for the App to run; iTunes Connect only accepts files in the ZIP format.

At this point, your App is ready for deployment to the iTunes App Store.

Did You Know?

Ad Hoc is a great way to easily deploy apps to a small group of users. It is not a good solution for deploying apps to a large number of users. If you want to deploy your App to a large number of users then you will need to take advantage of Apple's powerful iTunes App Store.

Using iTunes Connect to Publish an App

You are now very close to having an App available on the iTunes store. Can't you feel the rush! You could be selling thousands of apps in a matter of a few days. The gap between you and riches is Apple's iTunes Connect publishing tool. You are very close now. You will be using a new Web site to upload your final iPhone Apps. The site is called iTunes Connect (*https://itunesconnect.apple.com/*). In every sense, iTunes Connect is your business relationship with Apple. The site allows you to set up your contracts, tax records, banking information, review sales trends, download financial report and manage your In App Purchases. You will need to complete these sections in order to sell your App in iTunes. This section is going to focus on the important part of iTunes Connect: Managing your Applications (**New!**).

Use iTunes Connect to Publish your App

1. In Flash, create your iPhone App, publish and package it, and then change the extension from IPA to ZIP.

2. Convert the 512x512 PNG pixel image into a JPG image. Label the new file 512.jpg.

3. Take a screen shot of your App as it appears in your iPhone. When your App is playing on your iPhone, press the Home and Sleep buttons at the same time (screen flashes) to take a screen shot of your App.

   The image is stored to your Camera Roll and is exactly the same size Apple needs.

4 Open your Web browser, and then go to the iTunes Connect page, and then use your Apple Developer ID and Password to log into the site:

◆ *https://itunesconnect. apple.com*

6 Click **Manage Your App** from iTunes Connect.

6 Add anew application or edit an existing one.

◆ **Add New App.** Click the **Add New Application** button to start the process of creating a new iTunes App.

◆ **Edit Existing App.** Double-click the application icon.

When you're done editing your App settings, click **Save Changes**.

There are several screens you need to complete to upload your App to iTunes.

7 If prompted, click the **Yes** or **No** option to specify whether your App contains encrypted data.

◆ For a first App, click **No** to keep the process simple. In the future, you can experiment with different settings.

6 Click the **Continue** button when you have completed the page.

The next page allows you to add product overview information about your App. For the most part, the content you enter on this screen can be edited after your App has been submitted.

Continue Next Page

Link to download the Developer Guide

9 Enter or change information about your App. The information includes the following:

- ◆ Name and description.
- ◆ Product primary and secondary categories.
- ◆ Copyright, version number, and SKU number.
- ◆ Keywords. Use for search engines (up to 100 characters).
- ◆ URLs. Application/support URL and support email.

10 Click the **Continue** button when you have completed the page.

The next page allows you to add a rating for your App.

11 Click options to answer the 10 questions to determine a rating.

12 Click the **Continue** button when you have completed the page.

The next page allows you to upload all of your App files.

13 Click the **Choose File** button to upload your App files:

- ◆ Upload the ZIP'd IPA file for the Application.
- ◆ Upload the 512.jpg for the Large 512x512 Icon.
- ◆ Upload a 480x320 jpg image for the Primary Screenshot.
- ◆ Add 1-4 480x320 jpg images for the Additional Screenshots.

The upload will take about 20 minutes. The upload is checking for some basic settings such as including the correct profile.

A green check mark appears for each successfully loaded image. A red cross appears when something is wrong.

14 Click the **Continue** button when you have completed the page.

The next page allows you to specify availability and pricing for your App.

15 Specify an Availability Date and Price Tier.

◆ **Availability Date.** Specifies when your App goes on sale.

◆ **Price Tier.** Select a price tier level; you do not get to select a specific price for your App.

This removes the pain of selling with different currencies. A Tier 2 App will be $0.99 in the US, 59 pence in England and AU$1.29 in Australia. There are over 70 different currencies that Apple manages for you.

16 Click the **Continue** button when you have completed the page.

The next page allows you to specify localization for your App.

17 Specify the localization settings you want for your App.

16 Click the **Continue** button when you have completed the page.

15 At this point, review all of your content, and then click the **Submit** button.

◆ When you're done editing your App settings, click **Save Changes**.

Did You Know?

Faster iTunes App Submission. Apple has done a lot to improve the review process for new apps. Today it only takes 5-7 days for an App to be approved and appear in iTunes.

15

17

Using Screen Orientation in an App

The iPhone has one characteristic that you will not see on a desktop or laptop computer: it can be easily rotated. Determining orientation can allow you to add interesting effects to your iPhone Apps (**New!**). For instance, the default Stocks tool on your iPhone will show you the numbers of a particular stock when you hold your phone in portrait; switch the phone to landscape and the content changes to a line chart illustrating how the stock is performing. This trick is accomplished through the iPhone being able to detect the orientation of the device. The iPhone can detect Orientation in four distinct directions:

◆ Default – Portrait

◆ Rotation Left – Landscape

◆ Rotation Right – Landscape

◆ Upside Down – Portrait, upside down

ActionScript contains a special class called the Orientation Class, which allows you to control content on the screen depending on the orientation of the device.

Use the Screen Orientation Class

① Create a new iPhone App, apply the appropriate provisioning profiles, and then save the file with the name *iPhoneOrientation.fla*.

② Add a dynamic text box to the Stage with the name *myTxt*, and then apply the _Sans font.

③ Open the **Actions** Panel.

④ Add a listener and function that changes the content of the text box based on the orientation of the device (see illustration).

⑤ Publish and package your file into an iPhone App and test it on your iPhone. Rotate your iPhone to see the text change on your iPhone.

In addition to using ActionScript to control the orientation of your phone, you can also have the whole movie auto-orientate as a default setting in your iPhone Settings screen. On the whole, however, you have much tighter control over your content is you use ActionScript to control the orientation of specific movies, sprites and objects over the auto-orientation Boolean setting.

For Your Information

Loading Files Into the iPhone

The Loader Class allows you to load external content into your Flash Player. For the most part, this still works when you package your Flash movie for the iPhone. For instance, you can still load MP3, Sorenson Flash video and PNG files. There is, however, one exception: you cannot load SWF files that contain ActionScript into your movies. This is a pain as a lot of Flash designers like to break up their movies into smaller, individual SWF files and then you use a shell SWF to package it all together. Hopefully that will change in future releases.

Using Geolocation in an App

Mobile devices are meant to move. With GeoLocation services, you can figure out your current location. So, when someone asks you "Where are you?" you can tell them.

The following example shows how to add Adobe AIR 2.0 GeoLocation Class (**New!**) to your iPhone App. This sample is stripped down to a simple Class file, which can give you an idea of how you can use this in other Apps.

Add GeoLocation Services

1 Create a new iPhone App, apply the appropriate certificates and profiles, and then save your file with the name *iPhoneGeolocation.fla*.

2 Add a dynamic Classic Text box to the Stage with the name *myTxt*, and then apply the _Sans font.

9 Create a new Class for the App with the name *iPhoneGeolocation*.

4 Save the ActionScript file with the name *iPhoneGeolocation.as*.

9 Add code to import the class files that allow you to use the Geolocation objects:

import flash.events.GeolocationEvent;

import flash.sensors.Geolocation

9 Create a new geolocation variable that you can use:

private var myGeo:Geolocation;

7 Create a simple If/Else statement that detects whether or not the geolocation services can be used.

The iPhone always gives the user of the iPhone a choice to whether or not you can use the Geolocation services. If you do not allow geolocation to be used a message will be posted to the text field informing the user that a location could not be detected. If you do, however, allow the user to use geolocation then a new listener event will be triggered and then re-run 10x/second.

9 Add a function triggered by the geolocation listener:

9 Publish and package your file into an iPhone App and test it on your iPhone.

How Does the iPhone Know Your Location?

There are three ways to detect your location. The most accurate method uses the Global Position Satellites (GPS) built into the iPhone 3G and 3GS. The second method uses Cell Tower Triangulation where the location of the device is determined by using 3 or more Cell Tower's. This method can be used by all iPhones and 3G enabled iPad's. The third method uses a WiFi hotspot, which is similar to the Cell Tower Triangulation but is only accurate to within a few hundred feet. All iPhone OS devices (iPhone, iPod Touch and iPad) support WiFi hotspot geolocation services.

Using Multitouch in an App

By default, Flash assumes that you are using a mouse to touch the screen. This actually works OK for many iPhone Apps and allows you to take the same code you have developed for other Flash movies and move it into your iPhone projects. That's OK, but what about those cool iPhone gestures (**New!**) you see people using to swipe content? Flash can do that, too.
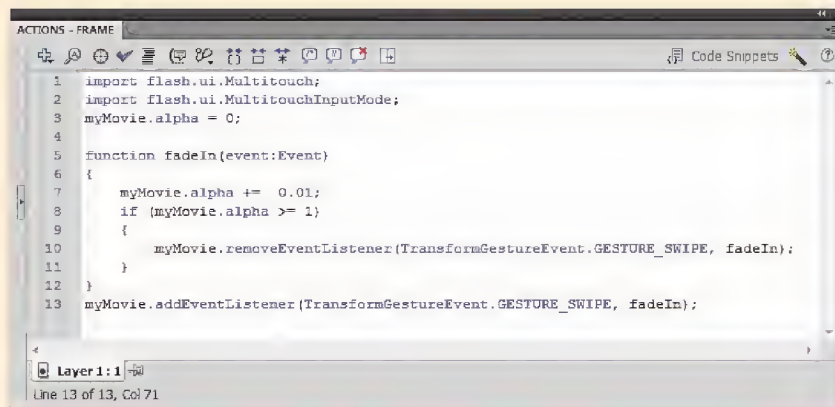
For the iPhone, Flash supports the following Multitouch gestures:

- TransformGestureEvent.GESTURE_PAN
- TransformGestureEvent.GESTURE_ROTATE
- TransformGestureEvent.GESTURE_SWIPE
- TransformGestureEvent.GESTURE_ZOOM

Each gesture is used as an interactive event in a Listener. This means that you can take your knowledge of Listeners and quickly apply it to iPhone Apps. The following example shows you how to add a swipe gesture that will trigger a movie clip to fade onto the screen.

Use the Multitouch Class

1. Create a new iPhone App, apply the appropriate development profiles and certificates, and then save the file with the name *iPhoneMultitouch.fla*.

2. Draw a rectangle on the Stage, and then convert the rectangle into a Movie Clip with the name *myMovie*.

3. Open the **Actions** panel.

4. Add code to import the class libraries:

   import flash.ui.Multitouch;

   import flash.ui.MultitouchInputMode;

5. Set the default Alpha value for the Movie Clip to 0:

   myMovie.alpha = 0;

5. Add a listener and function that enable the Movie Clip to fade onto the screen (see illustration).

7. Publish and package your file into an iPhone App and test it on your iPhone.


```
ACTIONS - FRAME

1   import flash.ui.Multitouch;
2   import flash.ui.MultitouchInputMode;
3   myMovie.alpha = 0;
4
5   function fadeIn(event:Event)
6   {
7       myMovie.alpha += 0.01;
8       if (myMovie.alpha >= 1)
9       {
10          myMovie.removeEventListener(TransformGestureEvent.GESTURE_SWIPE, fadeIn);
11      }
12  }
13  myMovie.addEventListener(TransformGestureEvent.GESTURE_SWIPE, fadeIn);

Layer 1 : 1
Line 13 of 13, Col 71
```